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Annual
Oilheating
Analysis

fueloil & oil heat

Provide Dependable Power

and Meet

Mechanical Design Specifications

The problem of a well-known manufacturer of business machines was to obtain a motor and a generator that not only provided the correct power to operate extremely sensitive solenoids but also fit the space which was at a premium. Holtzer-Cabot motor development engineers tackled the job and designed a special motor and generator with the proper performance characteristics in special frames which fitted the space specifications . . . and another motor problem was solved.

For over 50 years Holtzer-Cabot has concentrated its energies in designing and building special motors.

Holtzer-Cabot Powered Tabulating Machine

And although today, our plant facilities are devoted entirely to manufacturing special fractional H. P. motors for war products, our development engineers will gladly cooperate with you on your post-war fractional H. P. motor requirements

Special Motors Designed to Fit the Applicatio

HOLTZER-CABOT

Division of First Industrial Corporation

Designers and Builders of Special Fractional HP Motors and Electrical Apparatus

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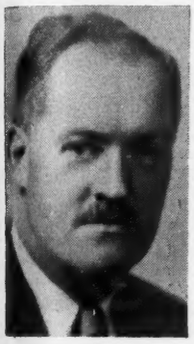
Names in the News



John R. Mahoney has joined the sales organization of the Viking Mfg. Corp., Dayton, Ohio, to cover the eastern and northeastern territory. He is well known in the heating and air conditioning business, having most recently been connected with The Carrier Corp., Syracuse, N. Y., which position he has resigned to join Viking.

Walter Hochuli, Director of Distribution and Marketing, PAW, has been named chairman of the Operations Committee, top administrative group in PAW, succeeding *Bruce Brown,* who recently resigned to return to Indiana Standard.

Fred T. Kennedy has been appointed general manager of the Blackmer Pump Company, Grand Rapids, Michigan. Until recently, he has been connected with the War Production Board in Washington, D. C.

S. D. Mizell, Atlanta, Ga., manufacturers' representative and president of the Southeastern Travelers Club, has been named Southeastern sales manager for the Richmond Radiator Company. He once conducted a heating business of his own, and for the last five years has handled the Richmond line of heating equipment.

H. P. Mueller, president of the L. J. Mueller Furnace Co., Milwaukee, Wisconsin, was re-elected president of the National Warm Air Heating and Air Conditioning Association for a second term. All other officers and directors whose terms expired were also re-elected.

fueloil & oil heat

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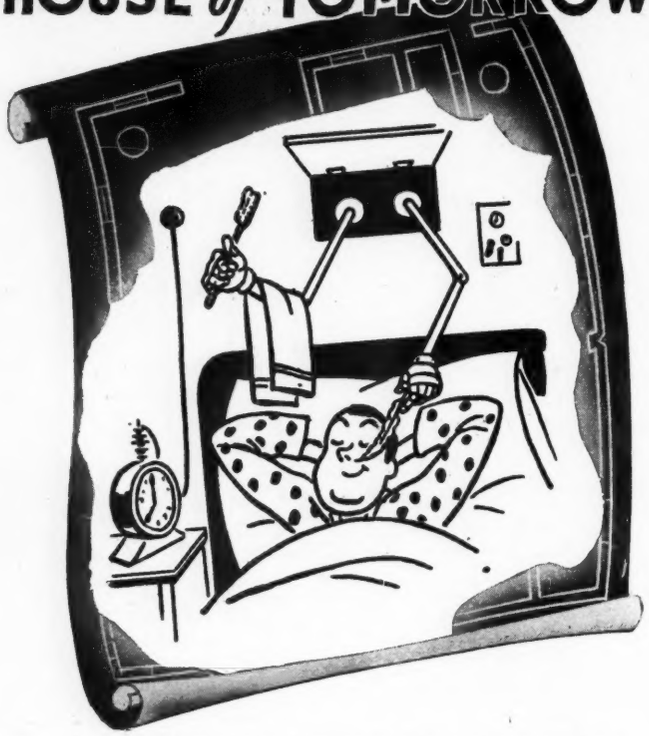
BLUEPRINTS FOR YOUR HOUSE *of* TOMORROW

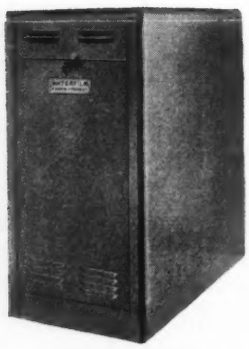


YOU MAY HAVE AN AUTOMATIC BEDROOM

This automatic bed, of the world of tomorrow, guarantees to get you up on time and to make running for the bus just a pre-war memory.

BUT –

Your Heating Plant will be KOVEN WATERFILM



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The post-war era promises to bring the realization of many seemingly fantastic dreams but even then the KOVEN WATERFILM BOILER will still be the choice for economical heating satisfaction. KOVEN WATERFILM, the fastest steaming boiler on the market, incorporates all the newest scientific developments to bring you quick heat, even room temperature and a plentiful supply of domestic hot water. Its patented construction and smart modern jacket cannot be duplicated by any other boiler on the market. KOVEN WATERFILM can be used for automatic firing with oil, stoker or gas... for use in apartment houses, large or small homes and industrial plants. The sectional series for apartment houses or industrial plants can be taken through a 2 foot door thus eliminating rigging and alteration costs. Call or write KOVEN for complete information.

WATERFILM BOILERS, Inc.
154 OGDEN AVENUE JERSEY CITY, N. J.
PLANTS: JERSEY CITY, N. J. • DOVER, N. J.

Eric Bergman, after spending twenty-seven months with PAW, District I, has now returned to his company, Degree-Day Systems, Woodside, New York.

Joe Staff has been appointed head of the new Tank Solvents Division of the Petroleum Solvents Corp., N. Y. This new department has been created for research purposes.

Paul B. Sagar has been appointed Eastern field engineer for General Controls Co., Glendale, Calif. He will work out of the company's branch office at Cleveland. He formerly was test engineer for A.G.A. at the Cleveland laboratory, and for the last five years has been control engineer for Iron Fireman.

J. A. Robinson has been named industrial manager of the Chicago branch Brown Instrument Co., precision industrial instrument division, Minneapolis Honeywell Regulator Co., Minneapolis Minn. He succeeds *O. B. Wilson* who will be industrial manager of the company's New York branch.

Allen Swartzmiller has been appointed manager of the Furnace Division of Jackson & Church Co., Saginaw, Mich., after two years in an administrative capacity with a plant making war materials. The company makes J & C warm air heating equipment ranging in capacity up to 2,800,000 Btu.

N. Stuart Irwin has been appointed assistant director of advertising and sales promotion for the Carrier Corp., Syracuse, N. Y. For the past six years *Irwin* has been with General Electric and Sherwin-Williams. *Allen K. Snyder* has recently rejoined Carrier Corp. as staff assistant to *Les M. Beals,* director of advertising and sales promotion. *Mr. Snyder* returns to the air conditioning and refrigeration industry from a long association with Dayton Rubber.

To all business, large or small...

Postwar business competition is going to be tough. Whether your trucks *make or lose money* for you is going to be more important than ever before.

Today in wartime, the lack of new civilian trucks has thrown a revealing light on the performance and stamina of every make of truck in the United States. Right now is the time to dig into all the facts as they exist—to find out which trucks are standing up best under the toughest conditions trucks have ever had to face.

Now is the time to determine which trucks will do YOUR job in the BEST possible way, at the LOWEST COST during the years ahead.

The phrase "Built like a Mack truck" got into the language because of something real that is *built* into Mack trucks.

Step by step—in materials, design and workmanship—they are deliberately built to work harder—last longer—require less repair than any other truck you can buy.

This is not a "claim," but a fact! It is backed by the records of thousands of wartime Mack owners who have seen Mack's better construction pay off at a time when it was needed most.

They will tell you—in no uncertain terms—that the man who owns a Mack is lucky, and the man who plans to get one is wise.

Essential civilian users can now secure Mack trucks. Ask your nearest Mack branch or dealer for details.

Mack

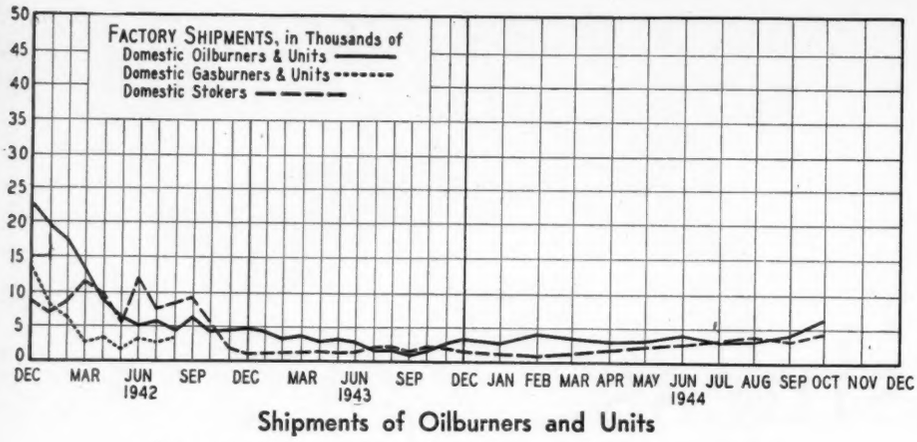
TRUCKS

ONE TON TO FORTY-FIVE TONS; BUSES
FIRE APPARATUS AND MARINE ENGINES

PERFORMANCE COUNTS

Buy That Extra War Bond Today

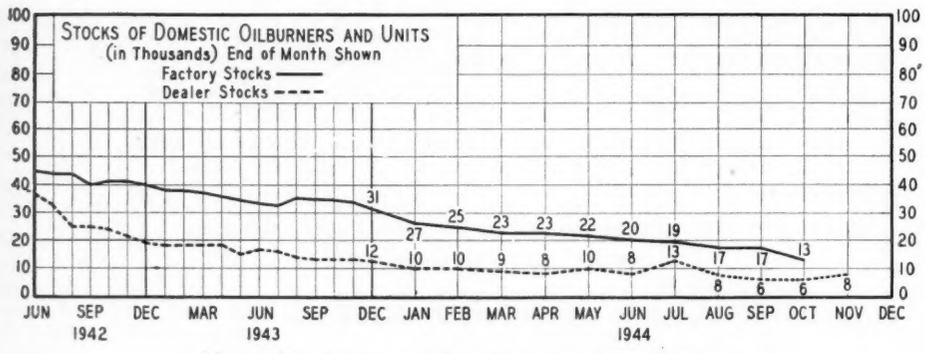
fueloil & oil heat



Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 85 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	OCTOBER			TEN MONTHS		
	1944	*1943*	*Percent Change*	*1944*	*1943*	*Percent Change*
Conversion	4,396	1,211	+263.0	28,190	13,863	+103.3
Boiler units	957	152	+529.6	4,803	6,022	— 20.2
Furnace units	1,053	157	+570.7	4,108	4,936	— 16.8
All domestic	6,406	1,520	+321.4	37,101	24,821	+ 49.5
Commercial	2,478	2,955	— 16.1	26,662	38,340	— 30.5
Total	8,884	4,475	+ 98.5	63,763	63,161	+ 1.0



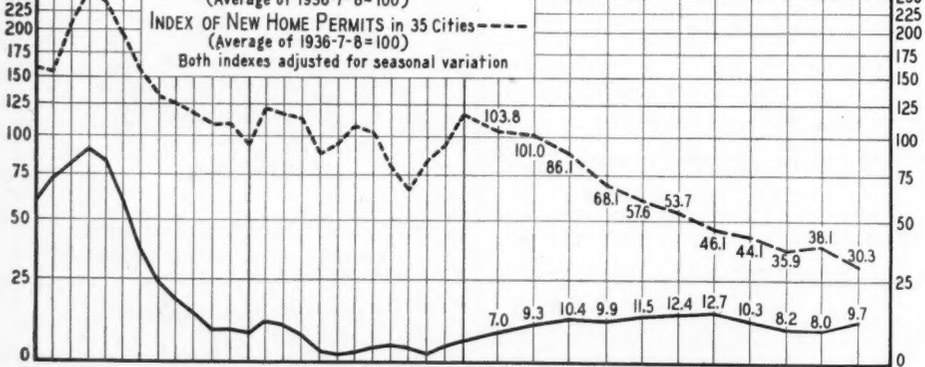
November Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$425	$195	$620	$390	$525	$380
Lowest	200	165	400	298	415	335
Nov. Aver.	272	185	423	354	469	357
Oct. Aver.	266	182	473	363	447	363

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more, for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
November	113.3	Six months ago	112.1	November	117.0	Six months ago	111.7
October	113.9	Year ago	104.8	October	114.0	Year ago	109.6



Oilheating Trends

NOVEMBER INSTALLATIONS of domestic burners and units are estimated at 6,389, compared with 1,369 in the same month a year ago, up 367%. In October they were approximately 6,885. November installations were divided: 77% conversion burners; 11% boiler-burner units and 12% furnace-burner units. Total installations for 11 months this year have been 42,646 and in the same period last year 7,848.

SELLING REBUILT BURNERS: As burners have become progressively harder to get throughout the year, dealers have been selling rebuilt burners to an increasing extent. Of all dealers who report regularly each month, rebuilt burners have represented 18.7% of all of their installations, or more than one in five. Generally these burners are cleaned up, repainted, worn parts replaced, and on 85% of such sales they carry the same guarantee as a new burner. The average sale price is 27% less than for a new burner, although some sell them at only 10% less. Elsewhere in this issue is an estimate of total burner sales for the full year 1944, based on the much larger study made each year in December; this estimate is 49,915 installations, and apparently about 9,300 of these were rebuilt burners.

GETTING NEW BURNERS: With replacement sales permitted wherever required, the number of these is still running much below replacements in peacetime, principally because sufficient new burners are not to be had. In a check made last May, 31% of dealers reported inability to get any new burners to sell; in December 63% can't find any. The other 37% can still get them . . . 15% get them from their regular factory sources, 10% from factories other than their franchised channels and the remaining 12% get them from jobber stocks, from other dealers, from RFC stocks and generally beating the brush.

BURNER STOCKS: Dealer stocks of domestic burners and units on December 1 were approximately 7,900, somewhat up from the 6,100 a month previous. However, when it is recalled that dealer stocks prewar ran around 40,000, today's monthly fluctuations mean little. Factory stocks dropped during October, the latest month for which figures are available, from 16,711 to 13,316. Shipments during the

month were 6,406 domestic burners and units, so new production during October war apparently about 3,011.

GETTING REPAIR PARTS: Most manufacturers feel that they are able to supply dealers with the needed repair parts for their burners, yet nearly every dealer reports considerable difficulty in getting some items. One dealer in five says that he had burners completely down for two days or longer during November while he hunted for parts. Thirteen items are reported as hardest to get, with motors, new or rebuilt, leading the list by a long margin. The next five in order of mention were fuel units or pumps, clock thermostats, controls and control repairs, pressure regulating valves and certain types of nozzles. Also mentioned, but with less frequency, were magnetic oil valves, wall-flame burner ignitors, relays, convectors, transformers and electrodes. One dealer in five reports that he could get the scarce items readily if he were willing to pay black market prices, a temptation sometimes hard to resist if the alternative is a customer without heat.

FUELOIL OVERCONSUMPTION: Obviously due to optimistic supply publicity during the past summer and early fall, people are definitely burning oil more liberally this season than last, although we are not yet in serious trouble over this, and we can expect that the more pessimistic present outlook and publicity will help check this prodigality. Reporting in early December, fueloil distributors expected that about 8% of their customers would either run out of oil and valid coupons by December 18, the start of Period 2, or they would just skin by, nip and tuck. Based upon the average sized ration, such people were exceeding their allotment at a 43% rate, assuming normal degree-days. But in most areas the season has been milder than normal, so the overconsumption rate is actually greater. This is virtually unrestricted consumption, although it is recognized that some users dug into their winter's heating oil barrel to supply last summer's hot water.

Another 29% of customers are reported as overconsuming, but less flagrantly, as determined from automatic delivery records. If this second group has used on the average 15% too much, the combined overconsumption of the two groups has a net impact of about 7.8% on the overall supply program. A year ago a similar check showed 5% of customers seriously exceeding their ration rate and 20% moderately overconsuming, for a net excessive drain on overall supplies of 5.4%.

DEALER FUELOIL STOCKS: When the new transportation shortage scare broke in late October, fueloil distributors swung to carrying larger bulk stocks than they had considered necessary when terminal supplies seemed plentiful. On December 1 Eastern local bulk stocks of distillate averaged 14% higher than on the same date a year before. On September 1 of this year they had been 20% lower than the year previous. The change from a minus 20 comparison to a plus 14 comparison achieved in three months shows that distributors are taking seriously the transportation shortage threat. District I and II comparisons as of December 1 show the following dealer stock increases over a year previous:

DISTRICT I		DISTRICT II	
Kerosene	up 4%	Kerosene	No Change
Distillate	up 14%	Distillate	up 16%
Residual	up 4%	Residual	up 15%

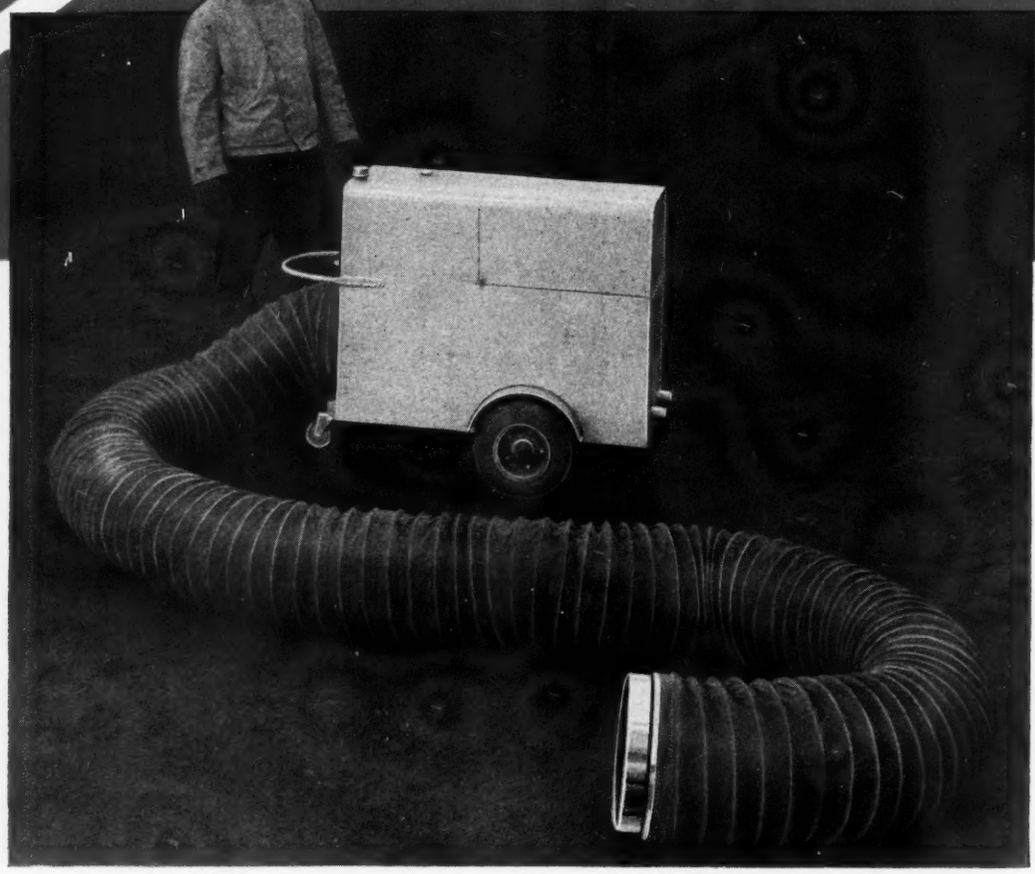
Three-fourths of the Eastern distributors reporting say that they plan now to keep their storage as full as possible; the others do not. Midwest answers on this question divide about half and half.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
November		11 MONTHS			November		11 MONTHS	
1944	1943	1944	1943		1944	1943	1944	1943
10	0	..	0	Albany, New York	..	..	..	..
..	..	..	..	Baltimore, Maryland	19	71	..	551
..	..	..	..	Binghamton, New York	0	0	1	0
..	..	..	..	Bloomfield, N. J.	3	1	..	1
..	..	..	..	Boston, Massachusetts	0	1	0	23
9	10	114	21	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Des Moines, Iowa	0	1	..	11
12	0	..	0	Detroit, Michigan	9	385	..	4512
4	..	..	..	Elizabeth, N. J.	0	0	..	54
..	..	..	..	Greenwich, Conn.	0	0	..	3
..	..	..	..	Hackensack, N. J.	0	0	..	0
4	1	14	1	Irvington, N. J.	0	0	8	13
..	..	..	..	Lynn, Massachusetts	0	1	..	2
10	1	..	7	Milwaukee, Wisc.	25	80	..	404
32	14	..	92	Minneapolis, Minn.	54	1	118	3
3	1	..	6	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	0	0
19	4	102	24	Mt. Vernon, New York	..	..	..	..
27	7	147	38	New Bedford, Mass.	..	..	..	..
11	1	38	5	New Haven, Conn.	..	..	..	..
0	1	3	7	New Orleans, La.	..	..	..	..
5	2	..	2	New Rochelle, N. Y.	0	0	1	0
60	6	..	55	Manhattan, Bronx, Rchd	..	..	..	..
..	..	..	..	Norfolk, Virginia	3	0	..	183
3	1	..	9	Oakland, Calif.	..	..	..	..
20	17	..	53	Omaha, Nebraska	20	28	367	45
2	0	3	1	Orange, New Jersey	0	2	0	2
15	0	56	8	Paterson, N. J.	1	0	3	32
..	..	..	..	Plainfield, N. J.	0	0	7	18
12	2	34	7	Portland, Maine	..	..	..	..
4	9	165	63	Portland, Oregon	3	82	..	1428
16	4	..	5	Providence, R. I.	1	0	1	0
..	..	..	..	Reading, Penna.	0	0	..	0
0	0	0	1	Richmond, Virginia	3	0	197	33
0	0	0	5	Rochester, N. Y.	..	..	..	..
4	0	33	7	Rockville Center, N. Y.	0	0	0	1
..	..	..	..	Salem, Massachusetts	0	0	0	0
13	6	..	55	St. Louis, Missouri	0	0	0	39
48	0	..	7	St. Paul, Minnesota	27	0	82	4
2	0	..	18	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	52	183	257	1429
..	..	..	..	Springfield, Mass.	1	2	15	272
9	6	..	8	Stamford, Conn.	..	..	..	..
..	..	..	..	Syracuse, New York	1	7	22	58
..	..	..	..	Trenton, New Jersey	0	43	8	183
..	..	..	..	Utica, New York	1	0	31	0
25	1	..	36	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	0	0	0
14	10	..	33	White Plains, N. Y.	0	0	0	0
3	1	22	4	Wilmington, Delaware	0	6	10	518
39	16	169	38	Worcester, Mass.	..	..	..	..
431	121	900	230	*Totals*	223	894	1128	2673
+247.1		+291.3		*Percent Change*	—75.0		—54.8	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

TODAY LOOK TO



The tiny unit shown at right delivers 150,000 B.T.U. —yet is scarcely larger than a home radio set. It can be taken anywhere . . . passes through an ordinary doorway . . . onto an elevator—can be towed behind a car or truck.

● ● ●

At right is the model A-150 Master Kraft Portable Heater complete with a single 18 foot x 12 inch collapsible duct. It delivers 150,000 B.T.U.

● ● ●

Below is the Model A-300 Master Kraft Portable Heater with TWO 18 foot x 12 inch flexible ducts. It delivers 300,000 B.T.U.

● ● ●

The ducts shown in both photos are flexible and collapsible. For carrying purposes, they collapse, accordion style, to only 24" length.

● ● ●

These heaters are self contained . . . may be readily moved from one job to another. There is a vast new field of utility for this portable, flexible heat.

● ● ●

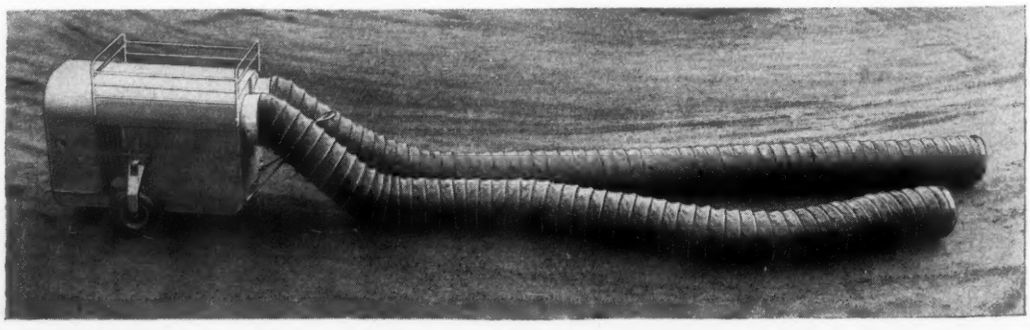
On the job, they deliver a forceful continuous blast of HOT air. You can aim this heat directly at what you want to heat.

150,000 B.T.U. Per Hour From This Bantam!

Here is a Master Kraft product which you can sell—TODAY* . . . a portable self contained hot air heating unit . . . *needed* by War Plants, railroads, street departments, fire departments, construction companies, building constructors, airports and airlines.

Only 39 inches long, 30 inches high, and 18 inches wide, it weighs less than 300 pounds, *yet delivers 150,000 B.T.U.* Delivers a continuous blast of HOT air through the flexible duct shown. You can AIM the heat—like you aim water from a garden hose! This is a commercial model, not a military model. More details at left—or write for illustrated folder "Heat that you can AIM." You can sell these heaters—NOW.*

*War plants, railroads, municipalities, and airlines needing these heaters should be able to supply the necessary priorities.



Industry Rounds the Turn

Oilheating Equipment Sales Start Back Toward Normal

OILHEATING TOOK ONE SHORT step on the way back to normal during 1944, showing an increase of nearly 50% in sales to 49,915 domestic burners and units. Burners operating reached an all-time high at the end of the year with the return of 17,605 former oilburner users by reconversion, and the addition of 11,635 new users of domestic equipment during the year. The addition of 29,240 operating burners during the year increases the total 1.2% to 2,413,695 installations, the first increase since 1941. Commercial oilburner sales totaled 30,705 in 1944, off slightly more than 30% from the year before, but reaching a new high of 320,680 commercial installations operating at the end of the year.

Domestic oilburner manufacturers shipped 42,700 burners and units during 1944, of which 8,000 went to war applications and other government work. Dealers got 34,700 of the burners shipped, took slightly less than 6,000 burners and units from their stocks, and installed 9,300 additional rebuilt burners. Replacements of old and inoperative burners last year totaled 38,280, included in which are 2,255 burners that were used to replace the former equipment when reconversions were made. These replacements still were 18,035 below the normal figure, making a deficit of 139,900 replacements that have not been made during the last three years. It is partially to supply this deficit that oilburner production has been authorized by the War Production Board, but difficulty in getting materials—particularly electric motors—is likely to cut the production below the 120,000 contemplated for the year beginning with the last quarter of 1944.

Conversions from oil to coal were negligible during the year. There was no official pressure to change fuels, and oil stock positions in the late summer made it possible to ease slightly the restrictions on reconversion back to fueloil. This easing came too late in the season to be fully effective, since many people already had received a part of their year's coal supply. Reconversions during the year returned 18.8% of the former fueloil users. Total reconversions of domestic installations in the last two years have brought back 26.7% of those who originally converted.

Retail domestic oilburner business on both conversion burners and units is estimated to have totaled $17,988,300 in 1944. This is an increase of more than 240% in dealer dollar volume compared with the year before when dealers handled less than half the burners shipped. Manufacturers' dollar volume increased only 41%. Total domestic burner sales and burners operating are shown in Table 1 for the last ten years.

Oilburners used in new homes during the year totaled only 810, though there were 10,825 new conversions made.

Fueloil users continue to represent more than half the 4,507,460 total automatic heating users in the country, though both oil and gas continue to lose fractions of a percentage point each year to stokers. The total 2,413,695 domestic oilburner installations operating at the end of 1944 represented 53.55% of all automatic heat-

TABLE 1

Domestic Conversion Burners and Units

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
150,510	$55,342,500	.....	1935	1,152,125
220,075	74,054,700	.....	1936	1,340,675
210,740	69,265,100	$22,238,200	1937	1,530,545
179,360	54,583,900	18,292,900	1938	1,667,745
236,140	66,520,400	23,352,200	1939	1,862,330
302,210	89,548,800	32,273,600	1940	2,135,125
333,250	113,546,400	41,931,800	1941	2,402,060
99,514	29,871,600	14,067,900	1942	2,386,290
33,445	5,283,300	5,431,000	1943	2,384,455
49,915	17,988,300	7,652,000	1944	2,413,695

TABLE 2

Domestic Conversion Oilburners

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
136,825	$43,373,500	$13,408,900	1935	1,115,125
197,430	59,229,000	18,558,400	1936	1,281,305
184,920	54,181,600	15,903,100	1937	1,446,295
153,850	40,462,600	12,154,200	1938	1,559,675
200,020	48,004,800	15,601,600	1939	1,719,940
238,845	55,645,900	18,152,200	1940	1,933,605
237,965	59,490,200	19,275,200	1941	2,113,160
71,658	16,552,700	6,090,900	1942	2,073,260
21,363	1,885,800	1,837,200	1943	2,065,465
37,885	10,607,800	4,184,600	1944	2,083,875

TABLE 3

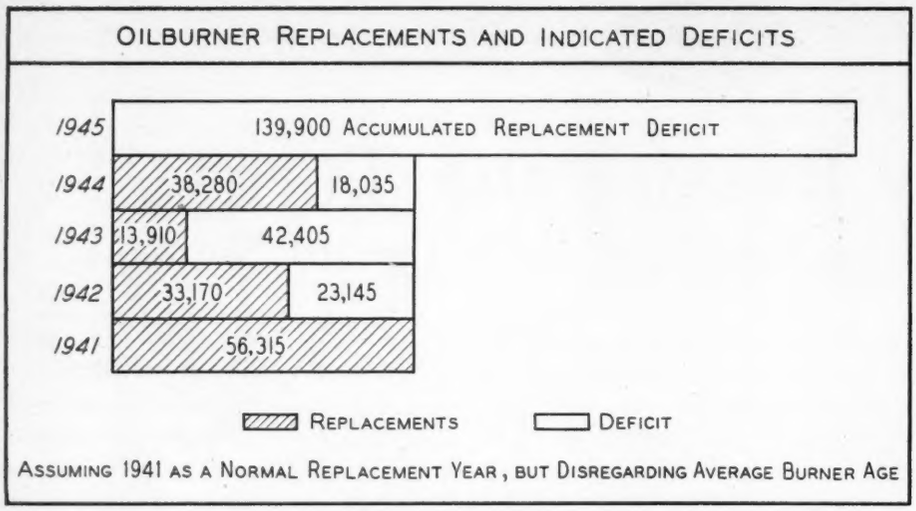
Integral Boiler-Burner Units

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
10,510	$9,511,600	.....	1935	31,400
15,025	9,781,300	.....	1936	46,250
14,430	8,557,000	$3,795,100	1937	60,240
14,220	7,877,900	3,711,400	1938	73,930
19,220	9,744,500	4,286,100	1939	92,540
26,955	13,322,700	5,005,300	1940	118,560
39,990	21,874,500	9,717,600	1941	155,720
9,313	5,289,800	2,877,700	1942	163,040
6,637	1,705,600	2,090,600	1943	166,240
6,440	3,909,100	2,002,800	1944	172,040

TABLE 4

Integral Furnace-Burner Units

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
3,175	$2,457,400	.....	1935	5,600
7,620	5,044,400	.....	1936	13,120
11,390	6,526,500	$2,540,000	1937	24,010
11,290	6,243,400	2,427,300	1938	34,140
16,900	8,771,100	3,464,500	1939	49,850
36,410	19,115,300	7,646,100	1940	82,960
55,295	32,181,700	12,939,000	1941	133,180
18,543	8,029,100	5,099,300	1942	149,990
5,446	1,691,900	1,503,200	1943	152,750
5,590	3,471,400	1,464,600	1944	157,780



ing installations, against 53.69% at the end of 1943, and 53.9% in 1942. Gas, with 1,111,855 domestic installations now operating, accounts for 24.67% of the total, compared to 24.79% last year, and 24.9% at the end of 1942. The total stoker installation of 981,910 are 21.78% of all mechanically fired installations, compared with 21.51% in the year before, and 21.2% in 1942.

Domestic Burner Types

Types of domestic burners and units sold in 1944 show little correlation with last year or with the five-year prewar average. Shortage of burners and units have made it necessary for dealers to use what they could get, rather than the equipment they might prefer. This condition also prevailed in 1943, but to a much less degree. No figures are yet available on the type of burners actually produced in 1944, but the relative availability of burners is believed to have had more effect on types used than any preference dealers may have had.

Of the 49,915 domestic burners and units sold last year, 36,288 were high pressure burners. This is 72.7% of the total, contrasted with 81.3% in 1943, and a prewar average of 71.7%. Low pressure burners and units accounted for 11.3% of the total last year, or 5,640. This compares with 3.2% in 1943 and 6.2% prewar. Vertical rotary burners, both wall flame and the atomizing type, totaled 4,393 installations, or 8.8% of the domestic total, against 5.6% in 1943, and 11.0% normal. Vaporizing burners for central heating were used in 3,594 installations, or 7.2%. This compares with 9.9% in 1943 and 10.8% in the five prewar years. Prewar average figures also include 0.3% of miscellaneous types, mostly horizontal rotary equipment used in domestic installations. The following table shows the number and percentage of total for each type of burner in 1944, and the percentages for 1943 and the prewar five-year average.

		1944 %	*1943 %*	*Five-Year Avg. %*
Hi. Pres.	36,288	72.7	81.3	71.7
Lo. Pres.	5,640	11.3	3.2	6.2
Vert. Rot.	4,393	8.8	5.6	11.0
Vap.	3,594	7.2	9.9	10.8

Though the "pup" type horizontal rotary burners is practically unavailable for domestic use, and represents too small a factor to include in war-time domestic installation figures, this burner is being used extensively in marine and other war applications. Domestic installations have been largely confined to burners and units that were either in manufacturer or dealer stocks.

Domestic Conversion Burners

Conversion burners accounted for 75.9% of the total installations in 1944, or 37,885 burners. This compares with 62.8% of dealer sales that were conversion burners in 1943, and a five-year prewar average of 80.1%. Though 1944 continues the trend away from conversion equipment in favor of boiler and furnace units, it is believed that availability of suitable units had more to do with the change than dealer preference.

Of the conversion burners sold, 190 are estimated to have gone into new homes and 7,805 to have been used to make conversions from other fuels. In addition, 1,210 were sold to replace burners in installations that were being reconverted to fueloil, and 28,680 were used to replace worn or damaged burners that were operating in 1943. Total conversion burners operating were further increased by 15,350 stored burners which were reinstalled when the owners reconverted to fueloil in 1944.

Both wholesale and retail prices of conversion burners stiffened during the year. Burners were at a premium at all levels. Manufacturers, distributors and dealers who were fortunate enough to have a small stock were not anxious to sell at present prices with talk of an increase in price possible in the not-too-distant future. Further, dealers have had to buy burners from other dealers and pay list prices in some instances, with the result that wholesale prices increased more than retail. Minimum price burners, practically all of which came from manufacturers, increased 2.6% to an average of $78. Though prices are frozen at March 1942 ceilings, dealers were required to buy in smaller quantities, and pay the higher price. The average price paid for all conversion burners increased 13.9% to $98. This is the first time since 1935 that dealers have paid so high an average

Table 5. Conversion Burner Price Trends

Retail					Factory			
Average	*% change prev. yr.*	*Aver. Min.*	*% change prev. yr.*		*Average*	*% change prev. yr.*	*Aver. Min.*	*% change prev. yr.*
$692	..	$554	..	1929	$240	..	..	..
629	— 9.1	516	— 6.8	1930	195	—18.7	..	..
495	—21.3	413	—19.9	1931	160	—18.0	..	..
438	—11.5	371	—10.1	1932	140	—12.5	..	..
395	— 9.8	341	— 8.1	1933	129	— 7.8	$109	..
341	—13.6	310	— 9.0	1934	118	— 8.5	99	— 9.1
317	— 7.0	275	—11.2	1935	98	—16.9	88	—11.1
300	— 5.3	266	— 3.2	1936	94	— 4.1	85	— 3.4
293	— 2.3	255	— 2.6	1937	86	— 8.5	82	— 3.5
263	—10.2	236	— 7.4	1938	79	— 8.1	76	— 7.3
240	— 8.7	218	— 7.6	1939	78	— 1.3	69	— 9.2
233	— 2.9	210	— 3.7	1940	76	— 2.6	63	— 8.7
250	+ 7.2	226	+ 7.6	1941	81	+ 6.9	65	+ 3.2
267	+ 6.8	245	+ 8.4	1942	85	+ 4.9	73	+12.3
276	+ 3.3	247	+ 0.9	1943	86	+ 1.2	76	+ 4.1
280	+ 1.4	258	+ 4.7	1944	98	+13.9	78	+ 2.6

price for burners. Minimum price burners at retail increased 4.7% to $258, and the average for all conversion burners increased to $280, up 1.4%. It is interesting to note that the greatest increase was in the minimum price equipment. Dealers seem to have decided that their cheap equipment is going too low. In 1943 the spread between the average price and the minimum was $29, but this was narrowed to $22 in 1944. Average and minimum conversion burner prices, both at wholesale and retail, are shown for recent years in Table 5.

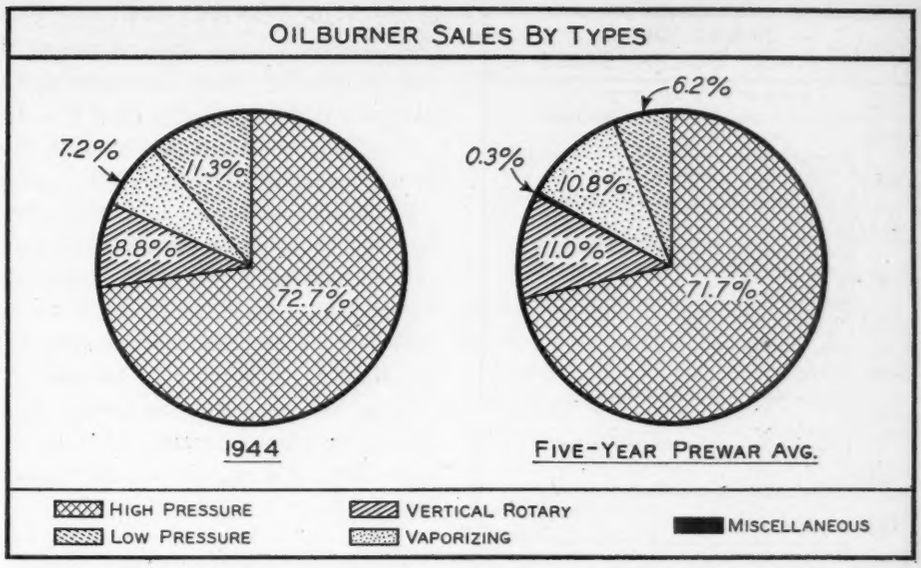
Average wholesale and retail prices by types of conversion burners in 1943 and 1944 are shown in the table below:

Retail			Wholesale	
1944	1943		1944	1943
$269	$257	High Pressure	$98	$91
346	289	Low Pressure	120	119
329	312	Vert. Rotary	123	120
196	191	Vaporizing	65	62

Average price of replacement burners is slightly down in 1944 when installed without controls, but the addition of controls brings the price more nearly to the average conversion burner price. Dealers last year were averaging $172 for a replacement without the tank or controls, against $174 in 1943. However, when controls were installed with the burner, dealers added $39 in 1944, compared with $27 additional in the year before. Replacement burner with controls in 1944 installed for $211, against $201 in 1943, up nearly 5%.

Conversion burner retail value was up to $10,607,800 last year in spite of a heavy replacement business. Conversion dollar volume in 1944 represented 59% of the industry total, compared with 35.7% in the year before, and 55.4% in 1942.

Factory value of conversion burners was up to $4,184,600, representing 54.7% of the total factory dollar volume, against 33.8% in 1943. Figures on conversion burner sales, dollar volume and burners operating are shown in Table 2.



Integral Boiler-Burner Units

Of the total burners and units sold, 6,440, or 12.9% were integral factory-assembled boiler-burner units. This represents a decline of 2.9% from the 6,637 units sold in 1943, but since only 3,200 of the 1943 units were handled by dealers (the balance going to government agencies) dealer volume of complete boiler units in 1944 was up 50.3%.

It is believed that 205 integral boiler units were used in new building, and 1,015 went into new conversions from other fuels. Replacements took 5,220 boiler units, of which 555 went into reconverted installations to replace burners that were being discarded as the owners returned to oil, 4,025 replaced operating conversion installations, and 640 replaced old boiler-burner units.

Complete boiler units operating at the end of 1944 had increased 3.5% to 172,040. Figures on sales and units operating, together with dollar volume for the last ten years is shown in Table 3.

Retail prices (Table 6) of integral boiler units were up sharply during the year to an average of $607, an increase of 13.9% over 1943. Low priced units sold for 24.6% more than in the year before, up to a minimum price average of $450. Here again, the greatest increase was registered in the lower priced equipment. Minimum prices increased an average of $89 during the year, while the average for all units went up $74.

Factory prices of complete units showed a decline from the 1943 level, the average going off 1.3% to $311. Minimum price equipment at the factory was off 6.5% to $216. Apparently manufacturers were less anxious to hold the more bulky units than the few conversion burners they had. The spread between cost and price was much better in 1944, and dealers upped their boiler unit volume 50.3%.

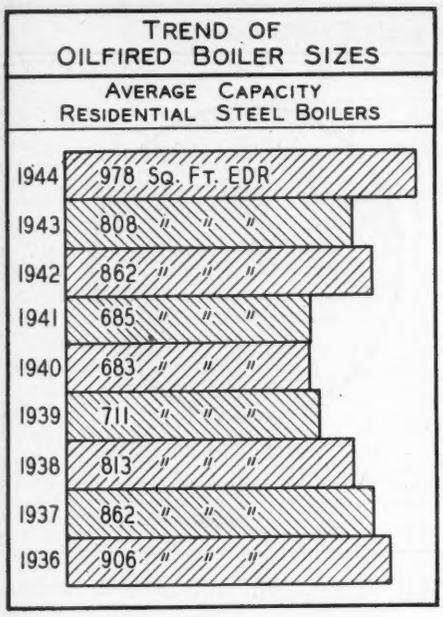
The retail value of integral boiler units more than doubled in 1944, compared with the year before to $3,909,100. Factory dollar volume, as shown in Table 3, was below the total value of all boiler units sold in 1943, but in that year dealers handled only 3,200 of the units the fac-

Table 6. Prices of Factory-Assembled Boiler-Burner Units

Aver-age	% change prev. yr.		Aver. Min.	% change prev. yr.
		RETAIL		
$905	...	1935	$723	...
651	—28.0	1936	566	—21.7
593	— 8.9	1937	516	— 8.8
554	— 6.5	1938	482	— 6.6
507	— 8.3	1939	441	— 8.5
495	— 2.4	1940	365	—17.2
547	+11.5	1941	378	+ 3.6
568	+ 3.8	1942	473	+25.1
533	— 6.2	1943	361	—23.7
607	+13.9	1944	450	+24.6
		FACTORY		
$263	...	1937	$246	...
261	— 0.7	1938	244	— 0.8
223	—14.5	1939	208	—14.7
215	— 3.6	1940	183	—12.0
243	+13.0	1941	201	+ 9.9
309	+27.1	1942	229	+13.4
315	+ 2.0	1943	231	+ 1.0
311	— 1.3	1944	216	— 6.5

Table 7. Boiler Sales

	Total Output	No. for oil	% for oil
	CAST IRON		
1935	160,105	29,310	18.3
1936	186,560	41,922	22.5
1937	169,707	58,462	34.2
1938	135,282	54,139	40.0
1939	146,919	61,070	41.6
1940	168,839	77,764	46.1
1941	178,076	80,176	45.0
1942	111,875	10,765	9.6
1943	81,500	8,852	10.9
1944	75,760	19,140	25.3
	STEEL		
1935	14,415	14,181	98.1
1936	19,242	18,622	96.8
1937	16,569	15,321	92.7
1938	19,098	17,218	90.3
1939	23,658	21,857	92.4
1940	24,580	23,206	94.5
1941	25,666	24,173	94.2
1942	13,000	7,238	55.7
1943	3,550	1,230	34.7
1944	3,310	2,168	65.5


TREND OF
OILFIRED BOILER SIZES
AVERAGE CAPACITY
RESIDENTIAL STEEL BOILERS
1944 978 SQ. FT. EDR
1943 808 " " "
1942 862 " " "
1941 685 " " "
1940 683 " " "
1939 711 " " "
1938 813 " " "
1937 862 " " "
1936 906 " " "

tories shipped, or slightly less than a million dollars worth of units. Dealer volume from the manufacturer this year was more than double that of 1943.

In addition to the integral, factory-assembled boiler units sold last year, dealers bought 14,868 boilers which they used with conversion burners to assemble their own units. This compares with only 2,835 dealer-assembled units installed in 1943 under the restrictions then in force, and 8,690 in 1942. Slightly more than 10% of the field—assembled units were steel, against 21% steel in 1943, and 19% steel in 1942.

Sales of all Boilers

Total boiler sales reached 79,070 last year, off 7% from the 1943 level. It is believed that the decline in the total is due to fewer government orders as the war plant has been built up. Of this total, 75,760 were cast iron boilers, or 95.8%. This is exactly the percentage of the total that cast iron boilers represented in 1943, but in 1942 cast iron represented 89.6% of all boilers, and the five last prewar years the average was 87.9% cast iron. Table 7 shows boiler output for both cast iron and steel types in recent years.

Last year marked a turn toward a more normal percentage of boilers for fueloil. More than 25% of the cast iron boilers or 19,140, were oilfired, against 10.9% in 1943, and 9.6% in 1942. Though total cast iron boiler sales were off for the year, oilfired boilers were up 127.5% over 1943.

Of the 3,310 steel heating boilers sold, 2,168, or 65.5% were for oil, against 34.7% in the year before and 55.7% in 1942. Residential steel boilers represented only 26.7% of the steel heating boilers in 1944, compared to 50.7% in 1943. All residential steel this last year totalled only 885 units, against 1,800 in 1943.

Boiler sizes continued to increase during 1944, as nearly all the units sold were for replacement of the older boilers installed before the more recent trend to small sizes. Cast iron boiler weights increased 9%, following an increase of 12% in 1943 over the year before. Residential steel boiler average size increased more than 21% in 1944 to 978 square feet, EDR.

Domestic Furnace-Burner Units

Complete factory-assembled warm air furnace unit sales last year were up less than 1% to 5,590, representing 11.2% of total sales of oilfired equipment. This compares with 16.3% in 1943, and 18.6% in 1942. Dealer sales, however, were up nearly 220% last year compared with the 1,760 units they got in 1943.

It is estimated that 415 complete warm air units were used for new building and 2,005 for new conversions in 1944. Of the 3,170 units used for replacements, 490 went to replace burners that are being reconverted to oil, 2,120 replaced operating conversion burners, and 560 replaced old furnace units.

Integral warm air units operating at the end of the year were up 3.3% to 157,780. Annual sales of furnace units, and number operating at the close of recent years are shown in Table 4.

Average retail price of these units was up 1.3% to $621, against $613 in 1943. Average minimum price, following the trend, was up 3.8% to $434, narrowing the spread between the average and the minimum retail prices. Factory prices of furnace units were down on the average more than 5% to $262, while the average low price unit was oil 9.9% to $217. Detail on prices for recent years is shown in Table 8.

Factory dollar volume was down slightly, reflecting the lower prices at which the units sold (Table 4), but retail value showed a sharp rise due to the greater number of furnace units dealers handled last year, and the higher prices they got.

Besides the integral furnace units dealers installed last year, there were 1,347 furnaces used with conversion burners to make field assembled units. This is an increase of 10.4% for this type of unit over the 1220 dealer assembled units in 1943.

Table 9 shows a break-down of the types of warm air furnaces sold during the year by type of fuel, material of construction, and whether forced or gravity types.

Table 8. Price Trends of Factory-Assembled Forced-Air Units

Average	% change prev. yr.		Average Min.	% change prev. yr.
RETAIL				
$774	...	1935	$642	...
662	—14.4	1936	576	—10.2
573	—13.4	1937	499	—13.3
553	— 3.5	1938	481	— 3.4
519	— 6.2	1939	402	—16.4
525	+ 1.2	1940	360	—10.4
582	+10.9	1941	402	+11.7
611	+ 4.9	1942	413	+ 2.7
613	+ 0.3	1943	418	+ 1.2
621	+ 1.3	1944	434	+ 3.8
FACTORY				
$223	...	1937	$210	...
215	— 3.6	1938	204	— 2.8
205	— 4.7	1939	198	— 2.9
210	+ 2.4	1940	196	— 2.0
234	+11.4	1941	201	+ 2.5
275	+17.5	1942	236	+17.4
276	+ 0.4	1943	241	+ 2.1
262	— 5.1	1944	217	— 9.9

Table 9. Warm Air Furnace Sales

	1944		1943	
	Cast Iron	Steel	Cast Iron	Steel
FORCED AIR				
Coal	3,500	4,290	12,420	6,290
Gas	2,615	3,533	1,140	1,480
Oil	470	3,954	590	4,640
Total	6,585	11,777	14,150	12,410
GRAVITY				
Coal	136,890	54,800	114,415	16,860
Gas	1,750	4,215	835	2,010
Oil	770	1,743	110	1,330
Total	139,410	60,758	115,360	20,200

Commercial Oilburners

Sales of commercial oilburners last year amounted to 30,705, a decrease of 30.9% from the year before. Of the 28,168 commercial heating installations converted to coal during the emergency, 5,295 were reconverted in 1944, and 7,858 returned to oil in 1943, a total representing 46.7% of the commercial heating installation originally lost. There still are more than

Table 11. Commercial Oilburners

Sales		No. Operating (End of year)
14,990	1935	176,240
18,435	1936	192,830
19,380	1937	210,275
13,955	1938	222,880
16,445	1939	237,680
20,710	1940	256,320
34,750	1941	287,595
55,360	1942	293,120
44,470	1943	285,045
30,705	1944	320,680

15,000 commercial jobs yet to be reconverted.

The 8,555 new commercial installations, plus the 5,295 reconversions made during the year, added 13,850 to the number of heavy oil heating installations, raising the total at the end of the year 4.8% to 298,895. There were 22,150 heavy oil burners used for replacements, or 72.1% of the total sales. Annual sales and the number of commercial heating installations operating at the end of the last ten years are shown in Table 11.

Competitive Equipment

Domestic gas burner sales are estimated at 20,510 for 1944, up 54.7% from the 13,255 in 1943. These sales were made up of 3,180 conversion gas burner installations, amounting to 15.5% last year against 6% in 1943; 5,217 boiler units, or 25.4%, against 26,3% in the year before; and 12,113 furnace units, 29.1% contrasted with 67.7% in 1943.

Total domestic gas burners operating increased nearly 1% at the end of the year to 1,111,855.

Table 10. Domestic Stokers

Sales	*% change*		*No. in use*	*% change*
11,361	...	1931	20,811	...
11,144	— 1.9	1932	31,955	+53.5
15,618	+32.0	1933	47,573	+48.8
25,510	+73.3	1934	73,083	+53.6
45,194	+77.1	1935	118,277	+61.8
84,421	+86.8	1936	202,698	+71.3
103,378	+22.4	1937	306,076	+51.0
98,907	— 4.3	1938	403,005	+31.6
106,208	+ 7.4	1939	507,412	+25.9
159,533	+48.6	1940	658,970	+29.7
198,243	+24.3	1941	843,313	+28.0
96,420	—51.3	1942	938,315	+11.3
19,040	—80.2	1943	955,450	+ 1.8
27,860	+46.3	1944	981,910	+ 2.8

Domestic and small commercial stokers (Classes 1 and 2) totalled 27,860 installations last year, of which 25,545 (91.7%) were bituminous stokers, contrasted with 85.8% in 1943, and 85.2% in 1942. This sales volume is 46.3% greater than 1943, as shown in Table 10. Small stokers operating at the end of the year were up 2.8% to 981,910.

Space Heaters

Dealers sold 2,410 oilfired space heaters in 1944, only 14.7% of the volume they sold in the year before. Rationing restrictions held down volume in the early months of the year. There is yet no figure on the total space heaters sold under rationing for the year.

Water Heaters

There were 5,060 water heaters sold by dealers, 1,267 or 24.9% of which were fired with mechanical burners. This compares with 25.2% in 1943, and 24.1% mechanically fired in 1942. There were 3,793 vaporizing type water heaters sold, down 56.7% from 1943.

Installed prices of mechanical water heaters were up 3.2% to $286, and vaporizing water heater prices were up to an average of $154, a 10% rise. This indicates a dollar volume for water heaters at retail of $956,500, of which 38.3%, or $362,400 was for mechanically fired units, and $584,100 (61.7%) for vaporizing units.

Summary

Dealers sales of oilfired equipment during 1944 were just under $20,000,000 in retail value, up 13% from 1943. The year seemed to mark the turning point in the industry's wartime history with prices generally stiffening, and the spread between the average price and the "low" price narrowing. Less emphasis was given to the minimum priced lines, and dealers were encouraged to offer better equipment.

Barring severe shortages of fractional horsepower motors in 1945, or scarcities of other parts that have not developed at the end of the year, there should be more equipment available to dealers during the year ahead, and some start toward clearing up the backlog of replacements can be made.

It seems doubtful if 1945 will see much more easing of fueloil rationing restrictions. An easing of hardship cases was attempted during 1944, and policy allowed more reconversions, but the third step—that of allowing unrestricted new installations—is likely to be delayed to the complete end of the war. Petroleum demands by the armed forces make necessary extreme caution in easing civilian restrictions, and there is little reason to doubt that the administration will be cautious. Rationing of fueloil and restrictions on new demands for all petroleum products will be with us to the end of both wars.

Burners and Oil, Inc.

Dealer Trends Show Closer Dependence

IN STUDYING THE RESULTS of 1944 operations of oilheating dealers, perhaps the most significant disclosure is that the trend toward amalgamation of oilburner and fueloil interests that started some 12 years ago has been even further emphasized in our third wartime year.

It is the logical outcome of a situation in which many small specialty oilburner dealers and heating contractors, deprived of products to sell to keep alive, failed to show up in the 1944 roster. The dealers selling both fueloil and burners could and did survive.

Saying it mathematically, the country's dealers who sell both fueloil and burners accounted for 82% of all oilburner sales in the past twelve months. They also sold 54% of all distillate heating oil and did 87% of the country's total oilburner service business. To show how much of a shift in this direction the war has brought, we have comparable figures on the first two items for 1941, the last prewar year. In that year, combination oil and burner companies sold 65% of total burners and 38% of total distillate heating oil.

When peace returns or when restrictions on new burner installations and on new home building are removed, the exclusive oilburner dealer and the heating contractor will come back and recapture some lost ground but probably not to equal their position in 1941.

A four or five year war, with those two groups virtually out of the running in oilheating, will establish habits or patterns in which both the industry and the public will have learned to look to the combination burner and oil dealer for satisfactory and undivided oilheating responsibility.

In analyzing the questionnaire returns this year, in which several hundred dealers have generously shared their 1944 experiences for the benefit of the industry, it has been particularly gratifying to discover that they represent an almost perfect sample or cross-section of the industry as a whole. When a simple arithmetic average of the answers to a particular

question are almost identical to the various weighted averages by which it can be checked, the sample is near perfect, Again, three types of questionnaires were used, sent to different groups, and some identical questions included in each. Checking the three groups individually, the answers varied less than 5% and the composite returns, putting the three groups together, differed less than 2% from the individual groups . . . the answer to a statistician's prayer.

Analyzing today's oilheating dealers from another viewpoint, an accompanying chart shows their relative importance based upon their business origin or background. All of the companies included in the chart comparisons either sold or serviced oilburners in 1944.

Those who came into this industry by the heating contractor route numbered 21.6% of all who sold burners; they made 7.7% of total burner sales and provided 7.2% of all burner service. The original fueloil distributor, largest in number of 1944 burner selling companies, or 43.2% of total firms, sold 34.8% of the burners and serviced 45.4% of them. The original oilburner dealers, now 35.1% of all those selling burners, made 57.5% of all 1944 burner sales and rendered 47.4% of all service. The chart also compares number of dealers and burners sold with 1941.

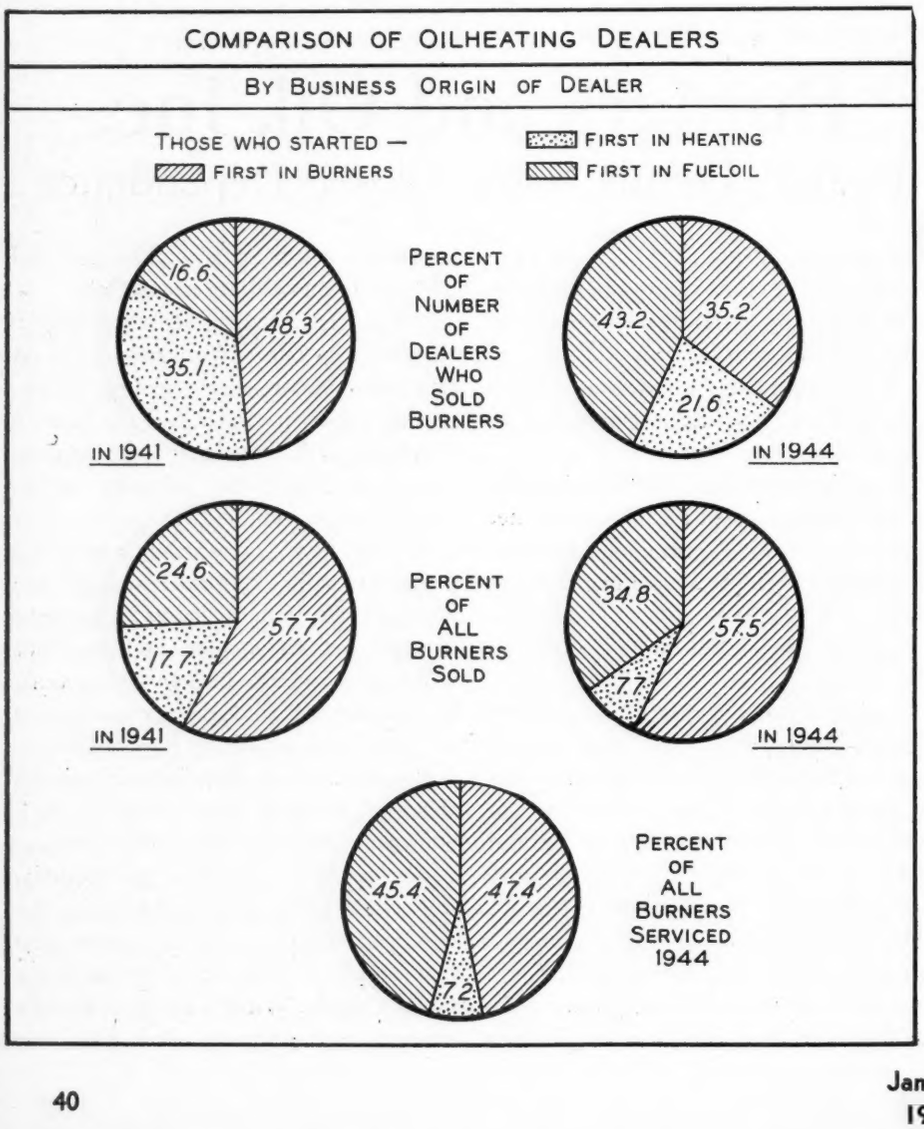
Of all the original oilburner dealers still active in 1944, 59% had income from fueloil sales; this was divided into 35% who operate their own fueloil trucks and 24% who sell on a commission basis. Those selling fueloil on commission averaged $1,700 from this source, with a few running over $10,000.

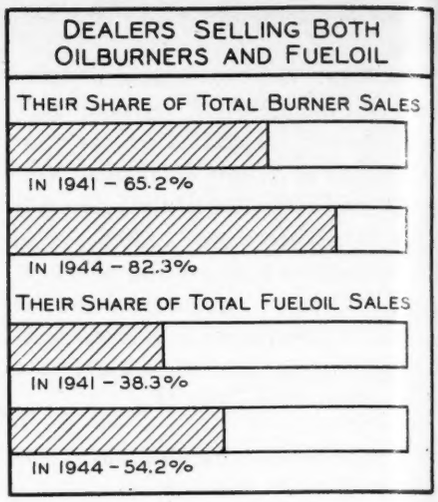
Crossing of competitive fuel equipment lines by oilheating dealers was less pronounced in 1944 than in either 1943 or the prewar period. Of all companies selling oilburners, only 18% sold stokers and 13% gasburners in 1944, compared with 34% selling stokers and 17% gasburners in 1941. An accompanying chart shows this by geographic areas.

One curious observation in a study of this kind is that coal companies who went into oilheating by adding fueloil departments often sell oilburners but rarely sell stokers. Of all companies selling oilburners in 1944, nearly one in six was originally a coal company. In the earlier section of this article they are included with the original fueloil distributors because fueloil selling was their advent to the oilheating field.

Among all of these coal companies that sold oilburners in 1944, only one in seven also sold stokers, and taking that group as a whole they sold 46 oilburners to each stoker sold. Losing too many coal customers to oil, they entered the fueloil business and today show a decided preference for oilheating.

Of all stoker sales last year by oilheating dealers, 56% were made by those

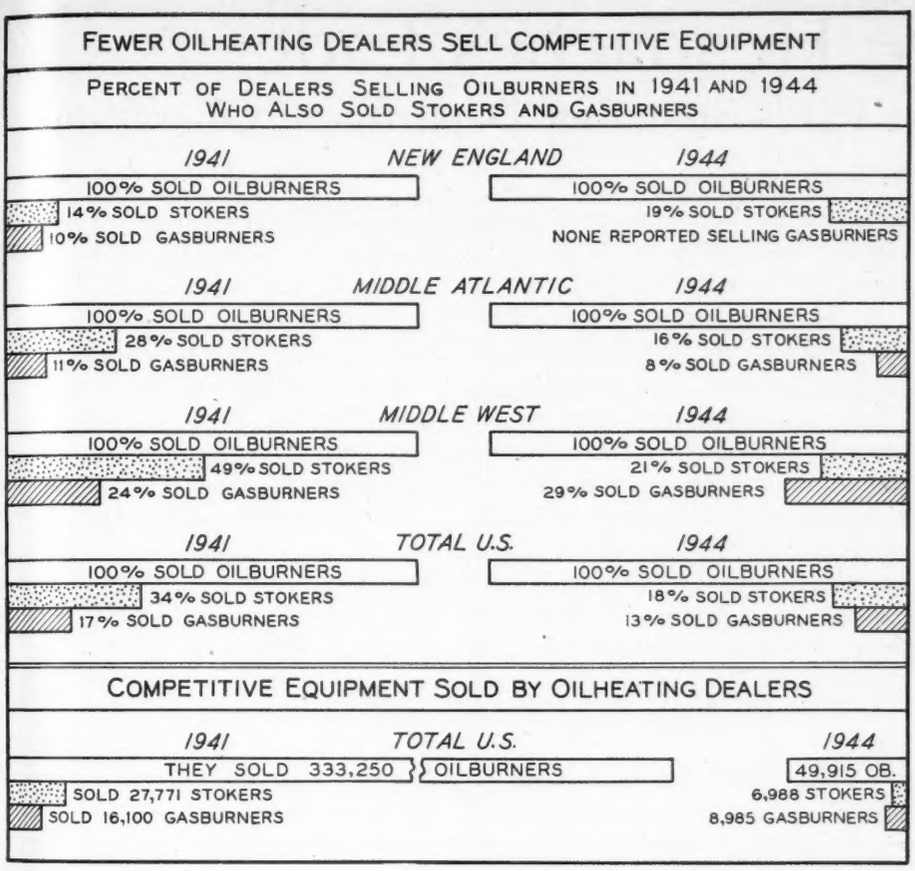



DEALERS SELLING BOTH OILBURNERS AND FUELOIL
THEIR SHARE OF TOTAL BURNER SALES
IN 1941 – 65.2%
IN 1944 – 82.3%
THEIR SHARE OF TOTAL FUELOIL SALES
IN 1941 – 38.3%
IN 1944 – 54.2%

Other Lines Sold

The table that follows shows the relative importance of all major products sold by companies that sold oilburners in 1944:

	EAST
100%	Sold oilburners
78%	Sold fueloil
72%	Sold heating equipment
31%	Sold coal
24%	Sold insulation
18%	Sold stokers
5%	Sold gasburners
	MIDWEST
100%	Sold oilburners
74%	Sold fueloil
71%	Sold heating equipment
26%	Sold coal
21%	Sold stokers
29%	Sold gasburners
15%	Sold insulation
	U. S. TOTAL
100%	Sold oilburners
73%	Sold fueloil
73%	Sold heating equipment
28%	Sold coal
20%	Sold insulation
18%	Sold stokers
13%	Sold gasburners



firms with heating contractor backgrounds, 35% by original oilburner dealers and the remaining 9% by the coal companies described.

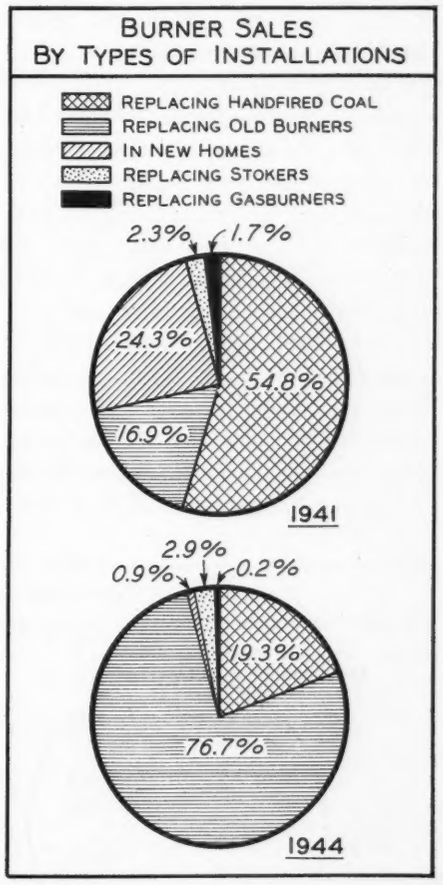
New England dealers have made the most headway in selling home insulation. Not only is the percentage of oilheating dealers selling insulation higher than in other sections of the country, but also that section registers the largest number of jobs per average dealer and the highest average income per application.

Insulation Sales

	Average Jobs per Dealer	*Average Dollars per Job*
New England	104	$266
Middle Atlantic	84	149
Middle West	27	194
U. S. Average	69	190

It is apparent that most Middle Atlantic dealers sell only attic insulation on the majority of jobs, while dealers in other sections sell more of the complete jobs including side walls.

As shown in the first article in this issue, the total number of domestic oilburners installed last year was 49,915. Of these, 38,280 replaced old burners and the remaining 11,635 were installed for new oilheating users, a considerably higher figure than generally expected, since the only legal way to get oil for these was through exceptions to PAW's PDO 13.



Chief among the new oilheating users were those who switched from handfired coal, numbering 9,296. Those installed to replace stokers were approximately 1,434, to replace gasburners 95, and in new homes 810.

Whether or not oilheating dealers in 1944 felt that the end of the war was approaching, it is clearly evident that they became much more conscious of the need for favorable public relations. This is shown by their expenditures for local advertising, which were more than three times their outlay in 1943 and nearly equal to what they spent in 1941, the industry's peak year. The strongest comeback was in newspaper and direct mail advertising, since those had dropped farthest.

The best common denominator for comparing advertising dollars spent in one year with another is to relate them to the number of burner service customers. On this basis average advertising expenditure per burner service customer was:

	1941	*1943*	*1944*
Newspapers	24¢	7¢	25¢
Direct Mail	14	4	17
Billboards	10	..	10
Telephone Directory	25	11	18
Total	73¢	22¢	70¢

The present enlarged advertising outlay is expected to continue through 1945, for dealers recognize that many customers were not too well treated in the early war years and it's time to get some fences mended.

Expect Crude Reserves Will Show Little Change

CRUDE OIL IN THE GROUND in areas that have been proved are expected to show almost no change during 1944, in spite of record withdrawals of about 1,680 million barrels for war and civilian use. Underground reserves at the end of 1943 were estimated at 20,064,152,000 barrels, down less than 1% from the all-time high of the year before.

In 1944 there were 4,000 or more wells drilled to find oil. Additions in new fields are expected to reach about 400 million barrels, against 282,418,000 bbls. in 1943. Additions due to extensions of previously discovered pools are expected to bring the total for the year to at least equal the production. Estimates of oil in new fields always are extremely conservative.

Service Headaches Fade

Third Wartime Year Finds Smoother Department Operation

GROSSING UPWARD OF 26 million dollars in 1944, oilburner service departments throughout the country were able to operate more effectively than in the two preceding war years. When the war started and burner sales were virtually stopped, dealers knew that they must place stronger dependence for survival on healthy service operations . . . but they soon ran into a situation of shrinking manpower and a growing scarcity of burner parts and accessories that made the going rough and the much needed profits elusive.

But those difficulties passed their worst stage in 1943, just as the peak of war production was passed in 1943, and since the two were closely related, the year 1944 saw more parts and equipment available for burner service and more service men back in harness. There are still some shortages in both categories, but definitely service departments turned the corner in the year just ended.

Each service mechanic in 1944 had to look after 438 customers on the company's books, compared with 461 the year before, still far too many by prewar yardsticks, yet some improvement. Measuring the easier availability of repair parts and accessories is the fact that 501 burners out of each 1,000 operating in 1944 got some new piece of repair or accessory equipment—perhaps only an air filter or oil filter cartridge—while in 1943 only 415 burners in each thousand were so favored.

The average oilheating user spent during 1944 for service $11.01, figured on a countrywide basis, although there was a big difference in this by regions. Eastern dealers have organized their service departments for revenue to a much greater degree than those operating in other parts of the country. This has both good and bad implications.

Like all industries operating under today's economic conditions, oilheating has its racket fringe, charging outrageous prices for parts, sometimes unnecessary, and this definitely builds ill will for the industry. But while stories of charging $40 to $60 to replace a pump or motor circulate quite freely, it is nonetheless obvious that the large majority of dealers avoid excessive profits in the interest of their future in the community.

A table on the next page shows a dozen service department operating characteristics, broken down by geographic areas. The low average service income per customer in the Midwest indicates that the majority of calls involve emergency service only, on which only the minimum charge is collected. This is all to the good, assuming nothing else was needed. But if the replacement of a nozzle will improve firing conditions and save oil it is in the customer's interest to do it, even though the old nozzle will keep the burner running.

Perhaps a more significant reason for higher average customer outlay for service in the East is that people there are more acutely aware of the oil shortage and as a result more willing to spend for anything that promises oil saving.

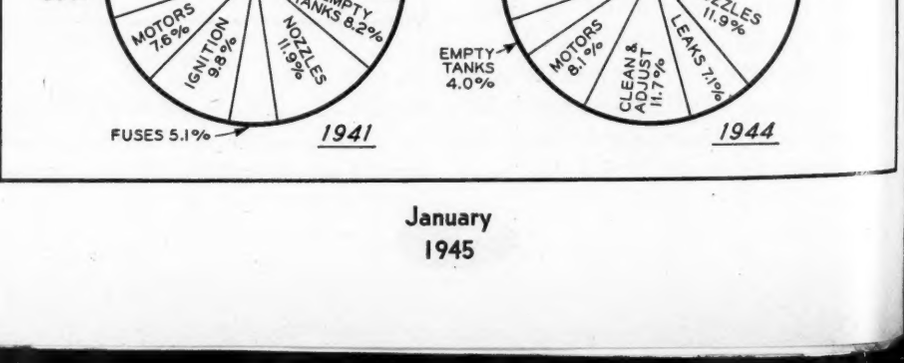
The table also compares service functioning for the country as a whole in 1944 with 1941, the last peacetime year. While the changes shown in the three-year period are pretty well recognized, it is interesting to see them in actual figures. The service man's weekly income is up 40%, while living costs for basic necessities are up about 25% in the same period, according to the Department of Labor. Thus, the service man can live better, which is all to the good, for burner service men were underpaid before the war in comparison to equal skills in other trades. This cannot be repeated after the war if we are to hold the good men and attract others to learn the trade.

On the other hand, average revenue per customer and revenue per call are up only 30% and average minimum charge is up only 23%. The charge for furnace vacuum cleaning has taken the longest jump, with a 64% rise. Annual service contract prices are actually slightly down during the period, with only about a third as many contracts in force today. More and more dealers have shied away from them because of wartime uncertainties.

A curious thing has happened to free burner service. Before the war, or in 1941 about 20% of all service was free. In the first war year, 1942, it was almost universally dropped, with only 2.1% rendered without charge that year. But in 1943 it went up again to 6.5%, as dealers became aware of certain OPA price implications. During 1944 this problem had been cleared up and the industry generally knew it, so free service dropped to 2.5% of total calls. But again in this item there is geographic variation. In New England only 4/10 of 1% of calls were free; in Middle Atlantic states 1.2% and in the Midwest 5.7%. Thus in another instance the Midwest holds down service revenue. The answer must lie in their more acute awareness of gas and stoker competition than Eastern dealers face, with gas offering free service in many communities.

Boiler and furnace vacuum cleaning

CAUSES OF SERVICE CALLS; PREWAR AND 1944



came back stronger in 1944 as manpower became less stringent. In the previous year the number of jobs cleaned had dropped to about half of normal, principally because it takes several hours to do a job and the few men available could be used to better advantage on repair jobs. Between the summers of 1943 and 1944 things had eased enough that the men could get back to cleaning work, with the result that during the past year about 741,000 jobs were cleaned. This is still well below the 837,000 cleaned in 1941, the all-time peak.

Causes of service calls are shown graphically in an accompanying chart; it is interesting to study these in comparison with 1941. Giving appreciably more trouble today are leaks, motors, pumps, bad oil and miscellaneous (principally strainers). This is the trend expected as average burner age increases, particularly the growing service needs of the moving parts of the burner. There is little room for complaint, however, on this, since the average life of burner parts is extraordinarily long. Burners are blessed by having their moving parts virtually steeped in oil. By comparison, the moving parts of a stoker operate in an atmosphere of abrasive dust.

Reference to the parts replacement table shows, for example, that only 18 motors and 27 pumps were sold for each 1,000 burners in use. That would appear to indicate that a burner motor lasts 50 years and a pump 40 years . . . wrong, of course, since half of all burners now in use were installed in the five years just before the war, but, even so, no one can well complain about that rate of replacement need.

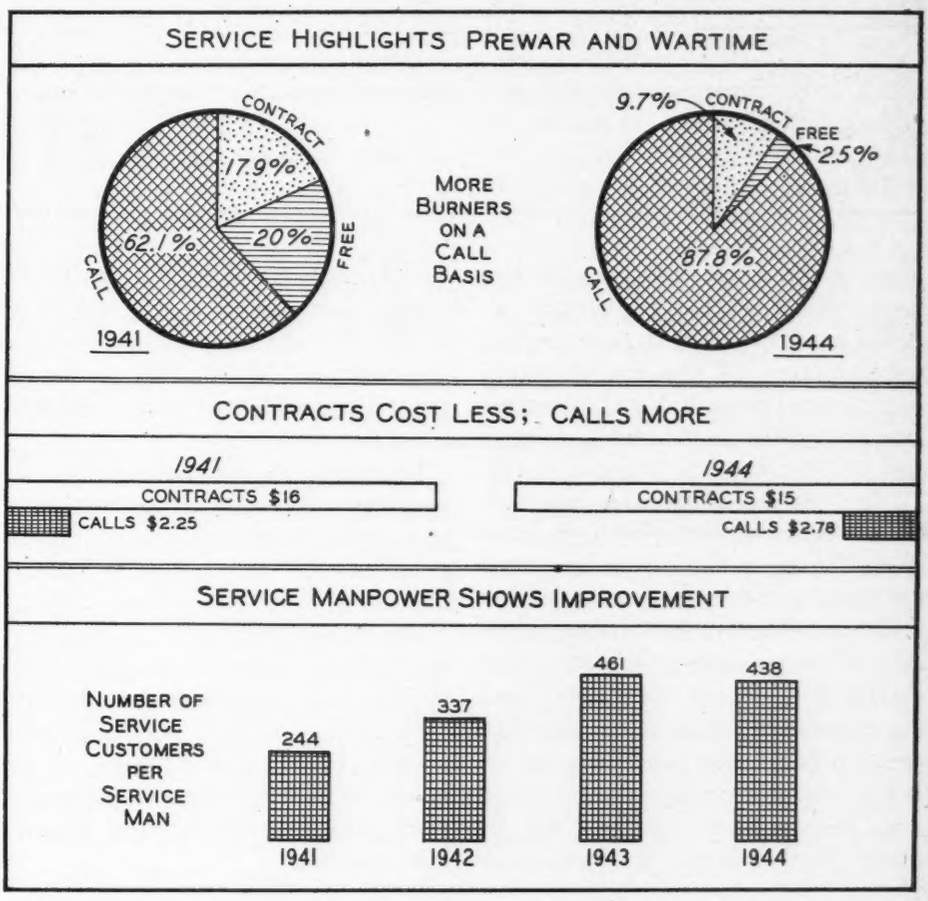
One particularly satisfactory item of service work in the past year has been reinstallation of burners where heating plants had previously been converted to coal. The number has not yet reached hoped-for levels but dealers expect a large number to reconvert at the end of this heating season, when they will have used up the coal in the bin.

It now appears that total domestic conversions to coal in all areas numbered 93,452. Of these, 25,004 have come back to oil, or 26.7%. Additional customers who have stated an intention of reconverting number 38,690 or 41.4%. The remaining 29,758, or 31.9%, may be lost to oilheating, but this will not seem a serious loss to the industry when restrictions are removed and we get back to installing new jobs, at a rate estimated upward of 400,000 a year.

Reference to the chart will show the geographic division of conversions and reconversions. The average charge for putting back into operation the old burner was $53.37. Regional averages were: New England $42.29; Middle Atlantic $62.86 and Midwest $48.13. One interesting

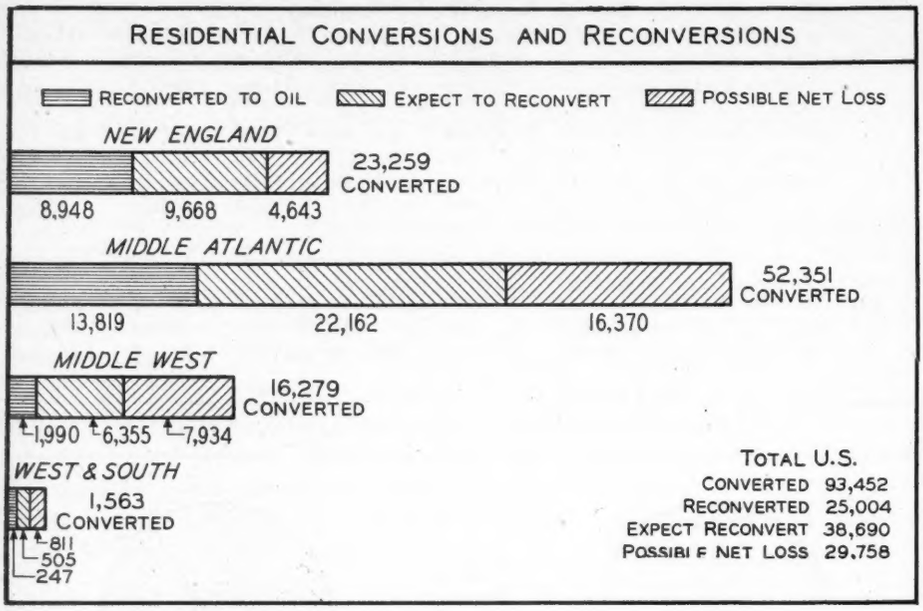
Service Activities by Regions

	New-Eng.	Mid-Atl.	Midwest	1944 U.S. Avg.	1941 U.S. Avg.
Service Income per Dealer	$11,294	$12,556	$4,382	$9,550	..
Service Customers per Dealer	758	937	749	867	..
Service Income per Customer	$14.90	$13.40	$5.85	$11.01	$8.45
Average Calls per Customer	1.5	1.6	2.1	1.7	1.7
Average Revenue per Call	$9.93	$8.38	$2.79	$6.48	$4.97
Minimum Call Charge	2.90	3.11	2.21	2.76	2.25
Annual Contracts, % of Customers	29	8	4	7	18
Average Contract Price	$16.36	$15.81	$13.44	$15.14	$16.00
Vacuum Cleaned, % of All Burners	45	35	18	31	39
Average Charge for Vacuum Cleaning	$8.01	$9.47	$5.49	$7.82	$4.78
Customers per Service Man	455	473	381	438	244
Service Man's Weekly Income	$52.41	$61.18	$58.26	$58.25	$41.50



Repair Parts and Accessories Sold with Service

	FOR EACH 1,000 BURNERS					1944
	New-Eng.	Mid-Atl.	Midwest	1944 U.S. Avg.	1941 U.S. Avg.	Indicated Total
Motors	22	19	15	18	10	43,200
Transformers	17	25	6	17	10	40,800
Fuel Units	39	30	15	27	19	64,800
Circulators	2	3	3	3	7	7,200
Low Water Controls	6	4	2	4	..	9.600
Burner Controls	26	41	27	33	22	79,200
Draft Controls	29	17	49	30	..	72,000
Nozzles	92	122	60	95	47	228,000
Combustion Chambers	15	29	14	21	27	50,400
Combustion Baffles	4	12	5	8	12	19,200
Oil Filters	76	85	35	66	..	158,400
Oil Tanks	19	13	7	12	..	28,800
Air Filters	112	79	305	162	..	388,800



phase of the reconversion program was the number of new burners that were installed instead of using the old one that had been taken out. One reconversion in six got a new burner. In New England the ratio was 16.1%, in the Middle Atlantic area 11.2% and in the Midwest 19.4%. To keep the records straight, these new burners sold on reconversions are included in replacement sales totals in computing the year's total burner sales.

Burner service trucks operating at the close of the year numbered 4,175, or an average of one to each 571 domestic heating customers. This is fewer than had been generally believed and shows the extent to which these light trucks have been worn out during the war and not replaced. In the absence of trucks, more service men each month are having to use automobiles to get around. In New England there is now one such truck to each 429 customers, Middle Atlantic one to each 695, and Midwest one to each 499 customers.

Going into the new year, service departments can apparently look forward to again being the most important revenue producer, other than fueloil, for oilheating dealers. In the year just ended service income grossed $26,000,000, compared to burner and unit sales totals of about $18,000,000. Each is expected to rise in 1945, but it will be late in the year before sales income can pass service income, so the boys from the back room can still stay up front and kid the telephone girl for quite a few months.

Fueloil Distributor Trends

Wartime Operations Generally Less Efficient

FOR REASONS NOT GENERALLY RECOGNIZED and perhaps even less understood, fueloil distributors in 1944 slumped in operating efficiencies, compared with 1943. This was not true by all measurements, nor was it true with all companies reporting their experiences, but the composite picture is on the negative side.

The year saw a decline in automatic delivery operation, in percentage of coupons deposited with suppliers and in gallons delivered per truck mile, three common yardsticks on the health of the industry.

Apparently a certain amount of operating efficiency had to be thrown overboard to get customers taken care of in the face of manpower shortages and particularly truck shortages. The fueloil business is primarily a transportation business, and when trouble develops in that vital part of the operation everything else is certain to be affected.

As the year ended, manpower shortages were definitely easing and it is safe to expect this trend to speed up in 1945. But with trucks the situation is expected to get worse before it starts to improve. The number of fueloil trucks in use today is 10% less than a year ago and 25% less than when the war started, and each time a truck drops out of the picture, the remaining ones must travel greater mileage and longer hours to get the industry's work done, even though the change spells reduced efficiency.

Truck Stringency Increases

If the European war had ended in the fall, civilian new truck production would have been well under way by spring. But the latest word on this is a WPB pronouncement of December 27 in which it cuts total civilian truck output for 1945 to 186,792 units of all types and sizes. This is only 24% of the 773,935 that the Office of Defense Transportation had certified as being essential to support our civilian economy.

An accompanying table shows 12 characteristics of fueloil handling and marketing in 1944. The returns from the questionnaires on which the figures are based were more numerous than usual this year, generally more complete, and the data can be considered well representative of the industry. The large distributor, in comparing these results with his own operation, will usually find his figures more favorable for efficiency, while with the average small distributor the reverse will be the case.

Nationwide, 78% of fueloil men operated their own bulk plants in 1944, and the remainder filled at other plants. Notice that this is stated in number of dealers, not in gallonage involved. Some very large Eastern dealers operating many trucks do not have bulk plants.

The average distributor last year had on the streets 3.3 trucks, compared with 3.6 the year before and with 4.4 when the war started. In delivering fueloil the average truck was driven 11,618 miles, a big jump from 9,634 the previous year. The mileage increase was more than proportionate to the reduction in number of trucks, one of the items of reduced efficiency referred to.

In showing average gallonage sales by products, an explanation is necessary to avoid confusion. The average dealer did not sell the total of all three products

Fueloil Handling Characteristics, 1944

	East	Mid-west	U.S. Avg.
% with Bulkplants	70	90	78
Storage Capacity, thousands of gals.			
Kerosene	50	62	55
Distillate	193	72	145
1944 Sales (thous. gal.)			
Kerosene	317	229	282
Distillate	1117	469	858
Residual	942	1316	1092
% Selling Kerosene	65	92	76
% Selling Residual	16	21	18
Number of Customers			
Kerosene	303	488	377
Distillate (Homes)	591	269	462
Distillate (Com'l)	51	29	42
Residual	97	60	82
Gals. per Distillate User	1739	1574	1673
Same in 1943	1615	1669	1637
Customers, all types, per truck	298	273	292
Same in 1943	275	220	267
Trucks per dealer	3.5	3.1	3.3
Same in 1943	3.8	3.2	3.6
Same in 1941	4.8	3.8	4.4
Avg. Miles per Truck	13131	9338	11618
Same in 1943	10199	7520	9634
Galls. all Products, per Truck (thous.)	332	251	317
Same in 1943	344	212	315
Miles per Customer	41	36	40
Same in 1943	35	34	36
Gallons per Truck Mile	25	27	27
Same in 1943	30	35	31

shown. Rather, those who sold kerosene averaged 282,000 gallons; those who sold distillate averaged 858,000 gallons; those who sold residual averaged 1,092,000 gallons. With all reporting dealers selling distillate (No. 2 or 3 oil), only 76% sold kerosene and 18% sold residual oil.

In showing number of customers per average dealer, it should again be noted that all dealers did not sell all types of customers; rather, dealers who sold kerosene averaged 377 customers, those who sold distillate 462 residential and 42 commercial customers, and those who sold residual averaged 82 customers.

The average sale of distillate per customer was 1,673 gallons in 1944, up slightly from the 1,637 of 1943. Interesting is the fact that this went up in the East and down in the Midwest. The Eastern change is easy to explain; in 1943 coupons were devalued in the winter months, first to nine gallons, then to eight, with the result that people got 6% less than full rations would have given them. Last winter they had full value coupons throughout, which just about accounts for the difference in average consumption.

In the Midwest coupon values were raised in the 1943 winter, because of excessive cold weather, with resulting consumption higher than with the par value coupons of last winter.

Average consumption of distillate users as shown includes commercial and apartment accounts as well as residential, so is not to be thought of as the typical ration for private dwellings. Normally about 12% of distillate heating consumption is in buildings other than private dwellings, so the indicated private home consumption was 1,472 gallons in 1944 and 1,441 in 1943. This checks quite closely with OPA records, in which private dwelling rations during the first season averaged 1,486 gallons.

The number of customers served by each truck rose 9% last year, from 267 in 1943 to 292 in 1944. This figure is not too useful, other than to show a general trend, for all types of customers are lumped together—distillate, kerosene and residual. Where companies sold two or more of these products, it was impossible to accurately isolate their truck usages. However, 20% of all those reporting sold exclusively distillate oil, and they averaged 195 customers per truck. While the number of such firms reporting is not too large, their experience is probably representative. A comparable calculation was not made last year, but in 1941, the last prewar year, the exclusive distillate sellers averaged 140 customers per truck. This checks rather well with the 25% decline in number of trucks operating between 1941 and 1944.

Gallons of all type products delivered per truck rose only slightly in 1944 over 1943—317,000 gallons against 315,000. Considering that there was a 10% decline in number of trucks operating, this would seem to indicate that less total product was sold in 1944 than in 1943. True, less was sold, but the decline was principally in residual oils, caused by the large number of conversions between the winter of 1943 and 1944. There was a slight increase in distillate sales.

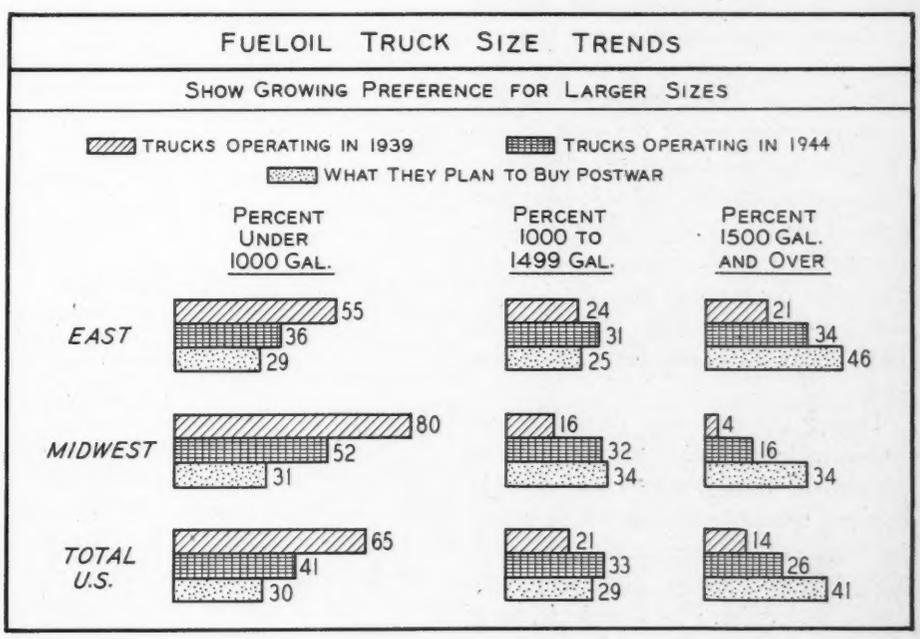
Total gallons of all products delivered per mile of truck operation slumped from 31 in 1943 to 27 in 1944. Some of this was caused by reduced sales of residual oils, where average size of dump is large in relation to mileage travelled. Also, truck miles travelled per customer went in the wrong direction, or upward, from 36 in 1943 to 40 in 1944.

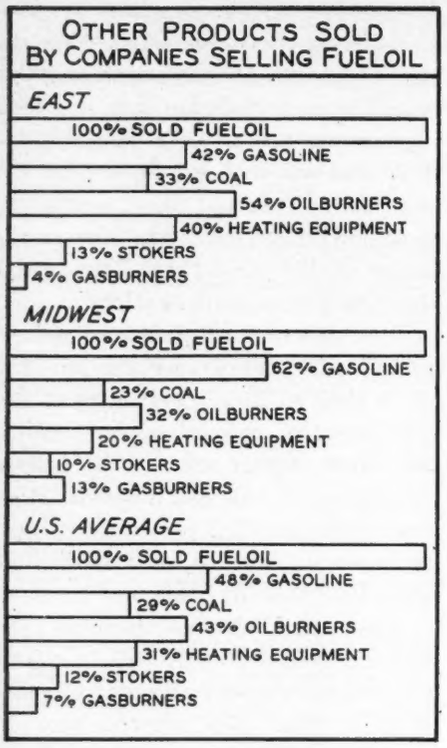
Automatic delivery operation was down in 1944, with only 36% of reporting companies using such systems, against 40% in 1943. Less coupons were deposited in the past year than in the previous year, even among those companies that employ automatic deliveries. Comparisons are:

Degree-Days and Coupons

	1943	1944
Percent of Companies Using Automatic Delivery	40	36
Percent of All Customers Served by Auto. Delivery	..	51
Percent of Coupons Deposited, All Companies	68	59
Percent of Coupons Deposited, Companies with Auto. Del'y.	78	76

There is an interesting shift going on in the trend of sizes of fueloil trucks, as shown more clearly in the chart. In 1939 a wide cross section of the industry was





studied to determine the ratios of truck sizes in use, and this was published in the January 1940 issue. The study has been made again for 1944, and in addition fueloil distributors were asked what new trucks they must buy when restrictions are lifted and the size preferences for these.

Obviously, small trucks will always be with us for there will always be small dealers whose business doesn't justify a large one. But companies with substantial gallonage want larger ones. Countrywide, 65% of all fueloil trucks in 1939 were of less than 1,000 gallons capacity; today these small ones represent only 41% of trucks operating, and looking to postwar, only 30% of trucks to be bought when restrictions are lifted will be of that size.

At the other end of the scale—trucks of 1,500 gallons and larger capacity—they represented 14% in 1939; today they account for 26%, and in future purchases they will be 41%. There has been less change in the medium size, the 1,000 to 1,499 gallon capacities, with 21% in 1939, today 33% and future purchases 29%.

During the past year there has been considerable discussion of the grade of oil used in vertical rotary and pot-type burners, primarily because of the changing nature of distillates in the new cracking processes. Through considerable education dealers have been made aware of the implications and probabilities and as a result most customers are being adequately served.

In areas where cracked oils ran particularly heavy, a number of these burners have been switched to lighter oil grades and some have blended the heavy No. 2 with kerosene to supply a synthetic No. 1. Blending was minimized, however, by OPA's refusal to permit a higher than No. 2 price for the blend, explaining that if the old No. 2 had been degraded the public could not be charged extra for putting back the light fractions that had been taken out. Of all vertical rotary and pot-type central heating plants served by reporting companies at the close of 1944 the percentages using various oils were:

	East	Midwest	U.S. Avg.
VERTICAL ROTARY			
Kerosene or No. 1	25%	61%	34%
No. 2 or No. 3	65	39	61
Blends	10	..	5
POT-TYPE			
Kerosene or No. 1	45	93	61
No. 2 or No. 3	54	7	39
Blends	1	..	..

Fueloil distributors in 1944 sold quite a variety of other products, most of them related to either the petroleum or the heating industries. Nationally, less than half sold gasoline. This is shown clearly on an accompanying chart, with sectional breakdown. Of all dollar income of companies selling fueloil in 1944, fueloil accounted for 62% countrywide, the same percentage in the East, and 61% in the Midwest, a surprisingly close parallel.

Dealers Look Ahead

One in Three Will Add New Lines

ALTHOUGH IT HAS BEEN generally believed that oilheating dealers have not put much time and effort into postwar planning, the present study shows that quite a majority know about what they're going to do. Of all reporting dealers, 33% plan to add new lines to those they now sell, 51% will not add additional lines, and the remaining 16% does not know.

Principal lines to be added are fueloil, oilburners, airconditioning and electric appliances. Of all companies selling oilburners in 1944, 73% also sold fueloil; 27% did not. Now 14% of the 27% say they will sell it postwar, or about an additional 4% of the total.

Of all companies selling fueloil in 1944, 43% also sold oilburners; 57% did not. When restrictions are removed, an additional 25% of the 57% will start selling them. This is about 14% of the over-all percentage, to be added to the 43% now selling.

A table on this page shows the relative importance of the new lines to be added when the war ends—they are much the same as numerous dealers have always sold. In the article, "Burners and Oil, Inc.," on page 39, will be found some detail on what oilheating dealers now sell, and the numbers selling various lines. Also, in "Fueloil Distributor Trends" on page 44 is more discussion of lines sold—it is interesting to compare those with the

New Lines for Postwar

PERCENT IN EACH GROUP WHO WILL ADD LINE MENTIONED	*Dealers Now Selling Burners But Not Oil*	*Dealers Now Selling Fueloil But Not Burners*	*Dealers Now Selling Burners and Fueloil*
Fueloil	14%	..	..
Oilburners	..	25%	..
Electric Appliances	7	3	8%
Heating Equipment	3	..	4
Airconditioning	10	1	7
Insulation	3	2	2
Refrigeration	..	1	5
Heavy Oil	..	..	5
Gasoline	..	3	..
Gasburners	..	..	2
Kerosene	..	1	..
Space Heaters	..	2	..
Sheet Metal	..	..	1
Storm Sash	..	..	1
Miscellaneous	3	1	4

Needed Equipment

That Dealers Must Buy When Restrictions Are Lifted

	No. Needed per Thous. Customers	Indicated U.S. Total
BURNER EQUIPMENT		
Service Trucks	1.26	3,004
Furnace Vac. Cleaners	1.12	2,670
Portable Elec. Tools	1.61	3,838
Sheet Metal Machines	0.46	1,097
FUELOIL EQUIPMENT		
Tank Trucks		
Under 1,000 Gal.	0.66	1,573
1,000 to 1,499 Gal.	0.63	1,502
1,500 and up Gal.	0.91	2,169
Truck Meters	2.14	5,102
Truck Pumps	2.05	4,887
Fueloil Hose, feet	383	913,072
Bulk Plant Tanks	0.77	1,836
Average Tank Size, Gal.	..	20,404
Bulk Plant Meters	0.75	1,788
Bulk Plant Pumps	0.63	1,502

postwar planning revealed in the "New Lines" table.

Another table on this page shows things that oilheating dealers must buy as soon as possible when restrictions are removed or eased. They have been running seriously short on equipment—as indicated by the 25% shrinkage in number of trucks since the war started—and they must get some before much longer.

But the dealers have been very conservative in listing their earliest needs. The 5,244 tank trucks called for are less than are bought in a normally expanding fueloil year. The same is true of oil hose and bulk plant equipment. Apparently industry men in the three war years have learned to be so frugal of equipment that they can't now think in terms of unrestricted buying.

One interesting spot in the table is the need shown for burner service trucks. The number indicated as immediately needed is nearly two-thirds as many as all service trucks operating today.

Sees Nearly 10% More Building This Year

NEW CONSTRUCTION expenditures in the continental United States are expected to increase by about 9% from an estimated $4.5 billion in 1944 to approximately $4.9 billion in 1945, Secretary of Labor, Frances Perkins has reported. "This will mark the reversal of the downward movement since the peak of the war construction program in 1942," she said. "Private construction is expected to increase by somewhat over 30%, from an estimated $2.3 billion in 1944 to slightly over $3.0 billion in 1945. Public construction expenditures are likely to continue to drop, from approximately $2.2 billion in 1944 to $1.9 billion, subject, however, to the need for unexpected war facilities. These forecasts assume that Germany will be defeated at about the middle of 1945, and that Japan will still be an active belligerent as the year closes.

"Private construction expenditures were only slightly greater than public in 1944, but are expected to exceed public by about two-thirds next year. Non-farm residential construction will increase from about $700 million to about $765 million, with about 140,000 private dwelling units started during each of the two years. The reason for the difference in expenditure for the same number of dwellings will be that somewhat better houses will be built under the more liberal priority regulations made available in June 1944."

GI's Plan Entering Business and Farming

SEVEN PER CENT of the men now in the Army have definite plans for operating a business, five per cent plan to operate farms, according to a survey among troops in the United States and overseas theaters conducted by the Information and Education Division, Army Service Forces. For the most part they are interested primarily in relatively small enterprises, with half of those having definite plans saying they will invest $4,000 or less.

Among those who have definite plans for business or farming, 42% had previously been independent operators, an additional 45% had worked as employes in the same line of work they plan to enter. Only 13% had had no previous experience.

In addition to the 12% of soldiers who have definite plans, businesses or farms of their own, another 6% are definitely interested in such prospects but are not as certain. Still another 25% have vague plans or hopes for enterprises of their own, but also are considering other possibilities after discharge, including working for some employer in business or industry, working for the Government, working on a farm, or going to school.

Retailing and service enterprises account for six out of ten of the types of business enterprises of those who have definite plans for businesses of their own.

Panel Starts Burner Price Discussions

MEETING FOR THE FIRST TIME at Washington recently, members of the newly formed OPA Industry Advisory Committee discussed the use of March 1942 prices as a basis for pricing new domestic and commercial oilburners. This organization meeting will be followed early in January by a meeting at which the subject of higher parts prices will be discussed, and their relation to present oilburner prices. Oilburner prices at the manufacturing level are controlled by the general consumers' durable goods and building materials maximum price regulation No. 188.

Industry members stated that a fair volume of oil burners will be in production by July 1945 and that they anticipate taking care of accumulated replacement requirements by the end of 1945. Approximately 200 firms manufacture oil burners, the normal annual production of which amounts to about 335,000 units, a $25,000,000 market. Fully 80 per cent of this production has been handled in normal times by some 50 firms. About 80 per cent of the facilities of these firms is now engaged in war work.

Members of the panel are R. S. Bohn, chairman, Preferred Utilities, New York; E. P. Bailey, vice-chairman, National Airoil Burner Co., Philadelphia; R. P. Johnston, secretary, S. T. Johnson Co., Philadelphia; C. R. Collins, May Oil Burner Corp., Baltimore; R. M. Sherman, Silent Glow Oil Burner Corp., Hartford, Conn.; R. G. Whipple, Harvey - Whipple, Springfield, Mass.; W. A. Matheson, Williams Oil-O-Matic Htg. Corp., Bloomington, Ill.; Stanton Fitzgerald, R. W. Becket Eng. Co., Elyria, Ohio; Joseph Hearst, Automatic Burner Corp., Chicago; M. L. Judd, Delco Appliance Div., Rochester, N. Y.; and Paul B. Zimmerman, Airtemp Div., Dayton, Ohio.

BOWSER, INC., Fort Wayne, Ind., has been notified by the Navy that it has received the third star for its Army-Navy "E" flag.

Burner Production Lag Endangers Program

PRODUCTION OF DOMESTIC OILBURNERS for replacements, never more urgently needed than now, has lagged so far behind the fourth quarter program of 30,000 units it is threatening the already inadequate schedule. If war requirements continue to increase there is a possibility that production in succeeding quarters will be limited to the actual production in the fourth quarter, rather than the proposed or programmed production. Up to December 20, WPB regulations provided only that future production could not exceed the present program, but fourth quarter allotments must be manufactured within thirty days of the end of the quarter, or the allotments will be charged against the following quarter. The effect of this limitation will be to cut the 120,000 domestic burners which were programmed for production by the end of the third quarter of 1945.

Chief obstruction to getting allotments for domestic burner production is the manpower requirement. Most burners are produced in areas where labor is tight, and clearance with the War Manpower Commission is required before an allotment is made. This clearance is essential if a manufacturer employs more than 100 people, or if he will be required to add personnel to produce oilburners. If the manufacturer employs less than 100 people, and if he will not need additional help to make burners, he can get an allotment without difficulty. These regulations favor the small manufacturer who makes or assembles his own burners with a minimum of outside labor.

As of December 20, sixty-four manufacturers had received allotments for a total of 19,765 burners, an average of little more than 300 burners each. Since most of the large manufacturers can not get WMC clearance for allotments under the present regulations, it is obvious that most production will come from the smaller producers who can satisfy manpower requirements. Such manufacturers are being encouraged to apply for all the material they can use.

Officials at the War Production Board and in the Office of Civilian Requirements recognize that the present regulations penalize the larger manufacturers, but they point out that the burners are urgently needed, and it is not within their power to hold back production of urgently needed products to protect individual companies. Oilburners must be produced, they say, and the particular trade name they carry is unimportant.

Though allotments have been made for nearly two-thirds of the 30,000 burners programmed in the fourth quarter, it is felt that the shortage of motors may make it impossible to build more than half of them, or about 10,000. This will mean that the total program of 120,000 units for the year will be cut by the 20,000 deficit. There is a possibility that there will be more motors available in the second quarter of 1945, but if ways and means to produce burners are not found soon, the whole program may be further cut to 75,000 or 80,000 for the year. The industry will need 140,000 burners before the end of 1945 to take care of the accumulation of replacements that have not been possible in the last three years.

Stocks All-Time Low

There is no evidence of hoarding burners. Dealers stocks now are below 8,000 burners and units in the entire country, and manufacturers' stocks have been whittled down to units and burners of odd sizes and specifications. There simply are not burners enough being produced to supply the essential demand, and most of the manufacturers with the largest capacity to produce are barred from entering production by the manpower restrictions. Dealers should not blame their manufacturers for shortages they are powerless to avoid.

In addition to the 19,765 burners authorized within the program, slightly less than 5,000 additional burners have been authorized under PR 25, spot authorization. These burners will be included in the program only if other authorizations are below the program level. "Spot" authorizations carry a AA-5 rating for materials, whereas allotments under the regular program carry AA-3 ratings.

Materials are reported to be relatively easy to get with the exception of motors. Additional capacity will be available early in 1945, and it is hoped that this will soon make the motor supply easier. Furthermore, it is reported that some motor manufacturers are squeezing the water out of their backlog of orders, and getting the list down to the needed quantity, rather than the desired quantity. Stocking of fractional horsepower motors by manufacturers is to be eliminated insofar as possible, and orders are to be reduced to the number immediately necessary. Behind the motor situation there still hovers the price ghost. Oilburner motor price is frozen at levels considerably below that which the Army and Navy pays for comparable products. This price differential, coupled with the urgency of military demand, leaves little incentive for motor manufacturers to inconvenience themselves greatly to supply this industry.

It is further pointed out that oilburner manufacturers generally have individual motor mounting specifications which frequently call for special end bells and machining. Most other industries can take conventional foot-mounted motors which do not require the special bells or additional machining, and can, therefore, pick up motors in small quantities or buy production over-runs that would not be suitable for oilburners.

The oilburner industry is not the only civilian business that is hit hard by present regulations. The same rules apply to all civilian programs, and manpower problems are equally acute. The domestic stoker industry, which was programmed to build 37,500 units in the fourth quarter, had received approval for only 15,900 units to the oilburner industry's 19,765.

It is suggested that manufacturers who have difficulty finding capacity to make their allotments investigate the possibility of subcontracting a part of their oilburner production to smaller manufacturers who can qualify to do the work for them. The need for new burners is urgent, and if one manufacturer can not qualify to make his quota, it may be given to someone who can.

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WILLIAMS OIL-O-MATIC HEATING Corp., Bloomington, Ill., has received its fourth Army-Navy "E" production award, showing continued excellence in war production.

Relaxation In Residual Oil Restrictions Cancelled

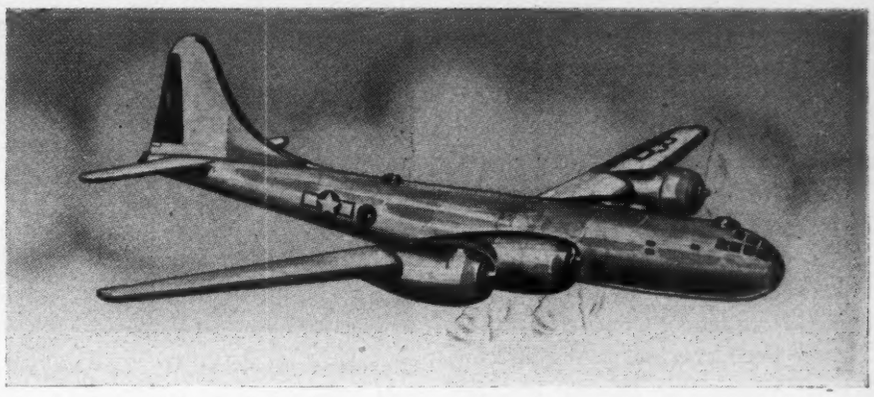
OPA HAS NOTIFIED local boards to withhold the further granting of additional residual oil to heating users, as had been provided in Amendment 29 to the fueloil ration order, except in cases of proven serious hardship. The Amendment originally provided that residual heating users could, in effect, go back to normal consumption rates. In cancelling the provision there is no thought of supply shortage of residuals, but rather transportation facilities have become so tight in recent weeks that terminal stocks in the consuming areas must be hoarded to provide even minimum heating needs.

Because it had been expected that the European war would progress much faster than it has, the Pacific commanders were given the green light to step up activities this fall. Now that plans have gone awry, we find ourselves with two all-out wars going at once, the Armed Forces have found it necessary to take over a much larger share of total tank cars and tankers than originally planned, and as a result it now looks like a tight squeeze to meet the rationed demands at par for the season. To accomplish this, transportation authorities have gone back to the methods employed in the first winter of rationing, such as drum shipments of kerosene to New England, reestablishing the 24-hour limit on loading and unloading tank cars, and shifting short hauls of under 200 miles from tank cars to trucks.

In withdrawing the liberality that had been extended to residual users, the withdrawal is not retroactive; those who already got the extra oil need not give it up, since that has been wedged into the demand program. No further residual reconversions are to be allowed, except if granted on hardship appeals. However, domestic reconversions may still be made, since relatively few additional applications are expected before spring.

◈

DOLE VALVE Co., Chicago, has just produced a new valve selector indicating the proper venting or vacuum valves for various types of heating systems both hand and automatically fired. A movable circular card with open window revolves against a square back, and the valve selections appear in the window.



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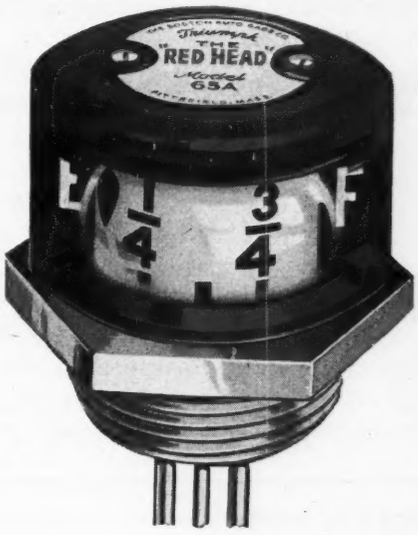
IN
Triumph
MAGNETIC GAGES
for Your
OIL TANKS



Could there be any better recommendation for an oil tank gage than this? As manufacturers of standard gage equipment for the remarkable Super-Fortresses, Mitchell Bombers and other aircraft, the Boston Auto Gage Company produces gages of like high standards for your oil tanks. The features which recommend these Red Head gages are:

EASY VISIBILITY
(From BOTH Sides)

INFALLIBLE ACCURACY — SIMPLE, DURABLE, FAULTLESS CONSTRUCTION and LEAK-PROOF for FUEL and FUMES

The RED HEAD Gage has two large, easy-to-read dials—quickly legible from any direction at longer than normal distances. Its simple, sturdy construction assures a lifetime of continuously dependable use. The head and bonnet are heavy die cast. The magnet is oversize and guaranteed permanent. The gears are rust-proof—more than amply strong. It's positively leak-proof for fumes as well as fuel because the dial is actuated by magnetic force only, directly through solid metal flooring. And it's listed as standard by the Underwriters' Laboratories. The RED HEAD is available in two types—Union type and Screw Type—for 1½ inch or 2 inch pipe size openings, and for tanks from 22 to 45 inches in depth—and adaptable up to 90 inches depth.

Sold by leading dealers everywhere.

The BOSTON AUTO GAGE CO.
PITTSFIELD - - - MASSACHUSETTS
MAKERS OF GAGES FOR ANY SIZE OR SHAPE TANK FOR FUEL OIL BURNERS, AUTOMOBILES, TRUCKS, BUSSES, MOTOR BOATS, STOVES, AIRCRAFT.

Cleveland Utilities Discuss Indoor Climate

ELECTRICAL LEAGUE OF CLEVELAND sponsored its first electrical industry conference on controlled indoor climate for more than 300 members and guests to discuss its share in the automatic heating market. Speakers from the heating industry were recruited from Indoor Climate Institute.

George Boeddener, managing director, National Warm Air Heating and Air Conditioning Association, dealt with a program for training installation men, contractors and dealers. He said, "Action must supplement planning right now, if this industry is to get its share of the consumers' dollar."

C. T. Burg, sales manager, Iron Fireman Mfg. Co., and a director of I.C.I. discussed sales techniques. "Today, more than ever before, the air conditioning industry must think in terms of aggressive selling," Mr. Burg stated.

C. E. Lewis, president, Oil Heat Institute of America and member of the I.C.I. Advisory Council, talked on the oil heat industry's plan for promoting controlled indoor climate. Mr. Lewis said, "Action gets results; this makes sense—and profits! Study your market, know your product, map your campaign; then follow through."

Cleveland speakers: *W. T. Clark, W. R. Moore, C. E. Lewis, P. B. Zimmerman, Jack North, George Boeddener, C. T. Burg.*

W. R. Moore, Regional Manager, Minneapolis-Honeywell Regulator Co., pointed out that the turnover in heating dealers is 38%. "This," he reasoned, "shows a definite need for training." Outlining the market in the Cleveland area Mr. Moore explained that of the 220,000 homes, 205,000 had central heating systems but that only 40,000 of them had automatic firing installations. He estimated the immediate postwar market for heating, cooling, and air conditioning equipment in the Cleveland area at $650,000, and said approximately $300,000 of this total would go into existing homes, $200,000 into new homes and $150,000 into commercial installations.

P. B. Zimmerman, president, Indoor Climate Institute, and vice president and general sales manager, Chrysler Corporation, Airtemp Division, covered "Making Cooperation Count." He showed how basic industries develop through progressive cycles of an introductory period, an acceptance era and finally the demand period. Mr. Zimmerman traced the growth of several industries; electric refrigeration, radio, automobile and house-

THE IMPROVED ROTARY TYPE

MASTER FUEL OIL BURNER

Designed to burn No. 5 or No. 6 Fuel Oil

For
Industrial Plants
Schools
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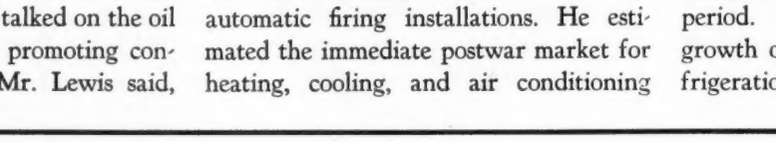

Distributors:

Do you qualify as an experienced distributor of rotary heavy fuel oil burners? If you will tell us your complete story, it may lead to an attractive, exclusive distributorship.

MANUAL, SEMI-AUTOMATIC OR AUTOMATIC OPERATION
RANGE OF SIZES FROM THE SMALLEST TO 350 H.P.

MASTER OIL BURNER

Division of
KETCHAM WIRE & MFG. CO.

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SEATTLE 4, WASH.

hold appliances. He emphasized that the demand period must be preceded not only by product development which always increases utility and economy, but by an educational program that will enable the public to evaluate the benefits to be derived from the product.

Jack North, president of the Electrical League of Cleveland and general sales manager, Cleveland Electric Illuminating Company, presided over the industry conference. W. T. Clark, managing director of the League, introduced the speakers.

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Added Ration Amendments

SIX ADDITIONAL amendments to OPA's Rev. Ration Order 11 have been issued since the December number. These are:

Amendment 35. Removes the restriction on issuing rations for used space heaters acquired after August 23, 1943, except in the Pacific Northwest.

Amendment 36. Simplifies the procedure for both board and applicant for handling rations for fueloil used in commercial motor vehicles. Ration is based on ODT Certificate of War Necessity or on applicant's statement of need, whichever is less.

Amendment 37. No separate ration bank account may be opened for a dealer establishment which has no registered storage capacity—if such account existed at the time of the amendment, it must be closed as of December 18. Also requires certain record keeping for two years, tying in firms outside the ration area and requiring that they supply indicated sales documents when selling to firms within the ration area. If any delivery is made without collecting ration evidences and the recipient fails to surrender to the supplier the evidences within 15 days after delivery, the supplier must report this to OPA.

Amendment 38. Extended to December 31, 1944 the deadline for filing Form R-1198, showing the dealer's current ration position, from the originally required filing date of October 25—as called for in Amendment 27. After the date extension, any dealer failing to comply will be reported to the Enforcement Division for appropriate investigation.

Amendment 39. Cancels the relaxation of restrictions on residual oil for heating originally granted by Amendment 29. Users may not now be given extra residual oil except in hardship cases. Also cancels residual reconversions, but not standby permissions to use residual. (All of provisions of the amendment apply to Eastern States).

Amendment 40. Provides that where a dealer has one ration bank account serving two or more registered establishments, and where he finds that preparing separate Forms R-1198 would be unduly burdensome, he may apply and be given permission by the District Director to combine the returns.

New G-E Radio Program Advertises Home Equipment

GENERAL ELECTRIC will launch on January 15, a new radio program titled "The G-E House Party," to promote its household equipment and appliances. The program will go on the air every day, Monday through Friday from 4:00 to 4:25 p.m. Eastern time over the entire Columbia network. Art Linkletter, master of ceremonies, will conduct an audience participation show which will feature a children's section in each program.

Quicker Deliveries... All Year 'Round!

Put warm weather speed in your wintertime deliveries of fuel oil . . . make more stops per truck per day despite low temperatures and snow-covered streets . . . with

"Newtype Cord" Fuel Oil Hose
(U. S. Pat. 1948410)

Rough, winter weather does not effect the qualities in "Newtype Cord" that assure *quicker deliveries* to business houses and homes. The reduced time required to unreel, fill the customer's tank, and reel up again, enables the driver to "make the rounds" in *profitable* time.

Light in weight and extremely flexible despite winter conditions, "Newtype Cord" is easy to handle . . . less fatiguing after a long day. Its non-flattening, kink-proof construction and non-swelling "Synplastic" tube keep it wide open, on the reel or off the reel, and assure a full, fast flow. Rugged durability in every length provides long, low-cost service. Available in all standard sizes and required lengths.

Contact Our Nearest Branch or Main Office for Details.

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MAIN OFFICE: 9 South 36 St., Philadelphia 4, Pa.
THE GOODALL-WHITEHEAD COMPANIES
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Factory—Trenton, N. J. Established 1870
WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION
75 Years of "Know How" — Our Most Valuable Commodity

Steel For 18,000 Tanks

STEEL FOR ABOUT 18,000 fueloil storage tanks has been allotted to tank manufacturers for fourth quarter production in a effort to ease the shortage of suitable tank sizes and weights. Companies who have received carbon steel for the fourth quarter include: Adamson Co., E. Palestine, Ohio; Armco Drainage & Metal Products, New Orleans; Birmingham Tank Co., Birmingham, Ala.; Brown Steel Tank Co., Minneapolis; and Butler Mfg. Co., Minneapolis and Kansas City.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.; John T. Clemmy Co., Mansfield, Mass.; Columbian Steel Tank Co., Kansas City; Columbus Heating & Vent. Co., Columbus, Ohio; Dixie Culvert Mfg. Co., Little Rock, Ark.; Eaton Metal Prods. Co., Denver and Omaha; R. L. Faubion Co., Kansas City; General Steel Tank Co., Birmingham, Ala.; and Kaustine Co., Perry, N. Y.

Lang Co., Salt Lake City; Leader Iron Works, Decatur, Ill.; Modern Welding Co., Owensboro, Ky.; Niles Steel Tank Co., Niles, Mich.; Quaker City Iron Works, Philadelphia; Rheem Mfg. Co., New York; A. F. Robinson Boiler Works, Cambridge, Mass.; San Equip., Inc., Syracuse, N. Y.; Southern Tank Co., Owensboro, Ky.; John Wood Mfg. Co., Chicago and Conshohocken, Pa., and Wyatt Metal and Boiler Works, Dallas, Tex.

◈

THE KEWANEE BOILER CO., Kewanee, Ill., is the proud receiver of its fourth Army-Navy "E" award for outstanding achievement in producing war materials.

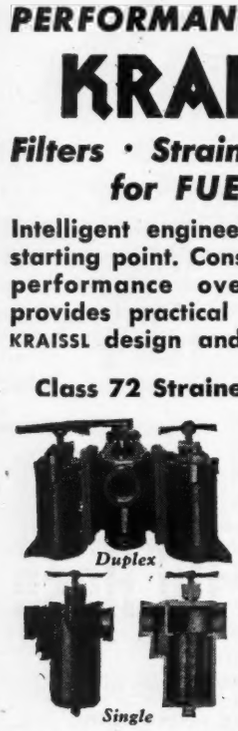
Proven by PERFORMANCE –

KRAISSL

Filters • Strainers • Pumps for FUEL OIL

Intelligent engineering is only the starting point. Consistent on-the-job performance over many years provides practical endorsement of KRAISSL design and manufacture.

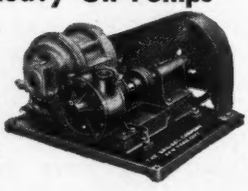
Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service—any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Kraissl-Trumbull No. 522 Fuel Pump Unit

Rugged, dependable wall pump for gravity type oil burners having burning capacity of not more than 3 gals. per hour—Approved by Underwriters' Labs., Inc.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

THE KRAISSL COMPANY
INCORPORATED
295 Williams Ave., Hackensack, N. J.

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	November		Percent		(Sept. 1 to Nov. 30)			Percent
Normal	1943	1944	Change*		Normal	1943	1944	Change*
756	871	786	+ 4.0	Albany	1282	1527	1425	+11.2
393	427	422	+ 7.4	Atlanta	535	597	556	+ 3.9
531	536	515	— 3.0	Baltimore	795	863	788	— 0.9
651	648	657	+ 0.9	Boston	1087	1123	1110	+ 2.1
747	827	695	— 7.0	Buffalo	1282	1530	1281	— 0.1
709	863	670	— 5.5	Chicago	1127	1393	1120	— 0.6
613	679	611	— 0.3	Cincinnati	939	1056	943	— 0.4
688	771	656	— 4.7	Cleveland	1134	1326	1128	— 0.5
298	317	259	—13.1	Dallas	373	401	289	—22.5
721	680	688	— 4.6	Denver	1260	1117	1081	—14.2
768	880	698	— 9.1	Des Moines	1224	1414	1052	—14.1
753	804	676	+10.1	Detroit	1249	1422	1155	— 7.5
768	825	693	— 9.8	Grand Rapids	1327	1451	1211	— 8.7
691	752	741	+ 7.2	Hartford	1165	1286	1258	+ 8.0
940	964	1027	+ 9.3	Helena	1829	1738	1800	— 1.6
162	195	147	— 9.3	Houston	191	236	155	—18.8
663	745	625	— 5.7	Indianapolis	1027	1163	951	— 7.4
599	698	556	— 7.2	Kansas City	891	1041	724	—18.7
110	52	182	+65.5	Los Angeles	158	102	221	+39.9
550	618	537	— 2.4	Louisville	802	852	782	— 2.5
788	873	709	—10.0	Milwaukee	1317	1498	1355	+ 2.9
943	1066	819	—13.1	Minneapolis	1590	1782	1378	—13.3
147	199	125	—15.0	New Orleans	172	259	138	—19.7
600	607	571	— 4.8	New York	925	989	889	— 3.9
741	877	738	— 0.4	Omaha	1147	1366	1058	— 7.8
548	574	530	— 3.3	Philadelphia	820	902	815	— 0.6
656	697	668	+ 1.8	Pittsburgh	1049	1213	1137	+ 8.4
792	828	806	+ 1.8	Portland, Me.	1430	1558	1540	+ 7.7
540	493	537	— 0.6	Portland, Ore.	947	787	760	—19.7
675	639	643	— 4.7	Providence	1142	1100	1035	— 9.4
558	637	572	+ 2.5	St. Louis	812	912	762	— 6.2
712	749	795	+11.7	Salt Lake City	1184	1109	1076	— 9.1
242	172	362	+49.5	San Francisco	504	404	638	+26.5
965	1012	913	— 5.4	Sault Ste. Marie	1860	2008	1852	— 0.4
558	497	515	— 7.7	Seattle	1104	908	839	—24.0
721	818	719	— 0.3	Toledo	1188	1449	1242	+ 4.5
558	551	526	— 5.7	Washington	855	893	830	— 2.9

*Compared with normal.

Matheson Headlines Rochester OHI Meeting

PLANS TO BE READY to take fresh raw material returning from the armed services, train them and put them to work selling were urged on distributors of oil heaters by W. A. Matheson of Chicago, president of Williams Oil-O-Matic Heating Corporation, at a meeting of the local chapter of Oil Heat Institute in the Sheraton Hotel.

Matheson was principal speaker at a dinner meeting which also heard talks by Robert Gray, Business Manager of FUELOIL & OIL HEAT, and A. E. Hess, executive director of Oil Heat Institute of America. Ray H. Adams, president of the Rochester chapter, presided, and Carroll P. Miller, secretary, gave a report on the recent regional Institute meeting in New York City.

Stressing the urgent need for "an honest-to-God selling job if oil is to dominate the heating industry—as we are going to do," Matheson pointed out that never in the history of industry in general has its situation been so precarious.

"Success of the United States in the postwar world depends on the success of business, and their success depends largely on the success of their selling organizations," he said, emphasizing that in selling during the first years after the war "we must create demand as we fill the pent-up war years' demand, and unless we do that, we are through."

Headliner *at Rochester OHI meet, W. A. Matheson talks postwar selling with Ray H. Adams, chapter president.*

"Rusty salesmen," according to Matheson, is one of the most serious problems facing the oilheating industry today. He warned his listeners that the slightly varying rejoinder, "dont' you know there's a war on?" has produced tough customers and flabby salesmen and that the war layoff has proved the old adage that "competition is the life of trade."

"The great danger, however, is that the first shot of competition might knock us out," he said.

Striking a more optimistic note, Matheson stated his belief in the laws of compensation, that for every risk there is a corresponding gain, that the hour of greatest danger is also the hour of greatest opportunity. He urged, in conclusion, that the oil heat industry be prepared to take advantage of the opportunity.

Prospects and problems of the fuel oil industry in the job of overcoming gas competition were discussed by Robert Gray, FUELOIL & OIL HEAT Business Manager. He informed his listeners that of the 27,000 pieces of gas equipment in the hands of dealers and manufacturers, only 3,000 or 4,000 are slated for the east, and the balance goes to the natural gas areas of the west. The gas group's organization of a $4,000,000 promotion program he attributed to belief on their part that oil heat is dangerous competition, and to loss of cooking and water heater business to

SINCE 1841 Hicks

TANK TRUCK BODIES

Write for Bulletin T-45

S. D. HICKS ENGINEERING CO., INC.

HYDE PARK 36, MASS.

New England Distributors MOORE & KLING, INC., BOSTON

electric appliance manufacturers. Among postwar advantages of the oil heat industry he included increased economy of operation, greater and possibly cheaper supply of fuel oil as a result of new transcontinental pipe lines, and slight prospect of expansion of natural gas lines.

Gray recommended that fuel oil distributors more generally adopt automatic deliveries as an answer to the highly-emphasized gas argument that use of their fuel obviates all inconvenience.

Hess outlined the new program being pushed by Oil Heat Institute nationally, which includes appointment of a technical secretary, a good representative in Washington, educational planning to meet gas competition, increased scientific research with special regard to new oils, adaptation of present equipment to new oils, getting new men in indusry through trade schools to provide basic training and advanced training with dealers, revision of Handbook of Oil Burning with incorporation of standardized installation rules and a general system of management and cost accounting for oilheating dealers.

Sid Harvey Starts Retirement Plan

SID HARVEY, INC., Valley Stream, N. Y., has announced a retirement plan for employees which will provide death and disability benefits as well as annual payments from a fund to which the company is sole contributor. Contributions to the fund over a period of ten years will be solely from company profits and benefits will be paid to employees when due, whether they are still in the company's service or not. Contributions from the 1944 profit is estimated to equal three weeks' salary for each participating employee.

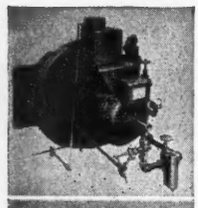
Officials *of Sid Harvey, Inc., at annual dinner. Lawrence Harvey, vice-pres., Sid Harvey, pres., Walter Bernard, sales mgr.*

Announcement of the plan was made at the company's annual Christmas Dinner, December 18, attended by 78 of the 87 employees. Principal speakers were Bill Archer, sales manager; Harold Jackson, plant engineer, and Lawrence Harvey, vice-president. Sid Harvey, president, presented Christmas presents ranging from $5 to $25 to each of the employees.

Milwaukee Group Elects

THE WISCONSIN OIL-HEAT ASSOCIATION, Inc., Milwaukee, Wisc., held its annual meeting November 30. Officers and directors who were re-elected for another year were: President, Walter J. Schroeder; Vice-President, Howard H. Elder; Treasurer, John Weiler; Executive Secretary, Harold M. Mottram; Directors, Charles N. Smith, R. J. Caldabini, J. H. Shellenberger, and E. R. Bensen. Members reviewed the important events of the past year and discussed future plans.

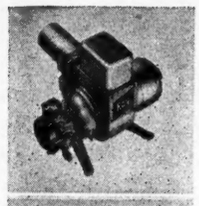
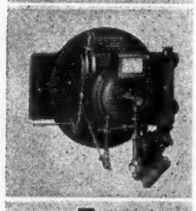
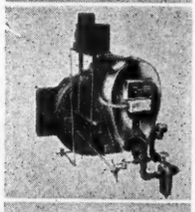
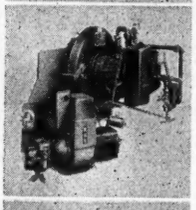
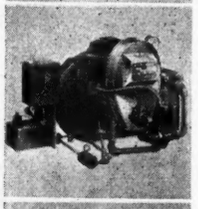
An OIL BURNER for Every Purpose



Shown here are a few representative models from the literally scores of Underwriter Approved oil burners built by RAY —builders of the World's Most Complete Line of Oil Burners.

No matter what the requirements:

- **Domestic, Commercial, Industrial or Marine**
- **For Light or Heavy Oil**
- **Manual, Semi-Automatic or Fully Automatic**
- **1 to 1000 Horsepower**
- **With whatever type of Control**
- **For whatever Electrical Characteristic or other source of power . . .**

RAY CAN SUPPLY IT

RAY

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RAY OIL BURNER CO.

403-477 BERNAL AVENUE • SAN FRANCISCO 12, CALIF • BRANCH OFFICE - NEW YORK

THE GENERAL AGAIN MARCHES AHEAD

with a new low-priced small Model (1A-25) Filter. A worthy partner for the well known deluxe Model 2A-300. Dealers—Your local jobber now has a complete stock of both models.

DE LUXE
Model 2A-300
Size 9" high, 5½" dia.

Features of the New Model 1A-25

1. ATTRACTIVELY LOW PRICED.
2. Removes all INJURIOUS solids from Nos. 1, 2 and 3 oil.
3. For the AVERAGE SIZE burner using not heavier than No. 3 oil. Especially suitable for vaporizing or pot type. The rate and dirt capacities compare with many filters which are much larger in size.
4. Filters EQUALLY WELL on either GRAVITY or PRESSURE type burners without making any change.
5. CENTRAL BOLT holds entire filter assembly together, eliminating customary quantity of bolts and nuts—QUICKER replacement of cartridge therefore. This design insures TIGHT FIT COVER—NO COVER LEAKS.
6. EXTRA LARGE CARTRIDGE compared to size of unit. Ample capacity for full season. Constructed of HIGH GRADE SURFACE WOOL FELT.
7. FINE WIRE MESH STRAINER to which filter material is assembled causes oil to pass through it twice after passing beyond the filter material, thereby preventing further passage of possible loose filter material particles.
8. CARTRIDGE IS HELD TIGHTLY against knife edge seals at top and bottom to avoid by-passing of oil.
9. STRAIGHT THROUGH inlet and outlet across top of filter, ⅜" pipe openings.
10. TWO SEPARATE AIR VENTS in inlet and outlet, easily operated with small srew driver. Of real interest to suppliers of oil pilot burners.
11. May be installed ANYWHERE in fuel line, either at burner (the preferable place) or at tank.
12. Helps ELIMINATE objectionable tank hum.
13. STURDY CONSTRUCTION THROUGHOUT with cover made of cast iron and bowl of heavy steel.

NEW STANDARD
Model 1A-25
Size 4¾" high, 3½" dia.

General Filters, Inc., 14435 Grand River Ave., Detroit 27, Mich.

INSIST ON GENERAL

GENERAL FUEL OIL FILTER

SEE YOUR JOBBER OR WRITE FOR LITERATURE

Listed: Re-Examination Service, Underwriters' Laboratories

"EDCO" PRODUCTS ARE WORTH WAITING FOR!

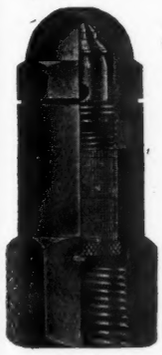


Fig. 246

Right now, "EDCO" production is bigger than it ever was in peacetime. Due to the ever increasing demand for "EDCO" Pumps, Pressure Regulating Valves, Pipe Line Strainers and Spray Nozzles by our Armed Forces, there is nowhere near enough left to meet the civilian demands — but they will be worth waiting for.

"EDCO" products have been good in the past. They will be better in the future—proved on the battle fronts of this war. They'll have still greater dependability assured by the vast experience and unusual exacting manufacturing standards which are adhered to.

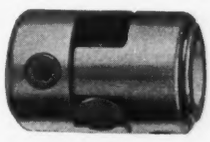
With Victory and Peace, "EDCO" production lines will keep right on producing trouble-free accessories to help you build the better world for which we are all fighting.

Have you received our new Spray Nozzle Bulletin #2046?

"Specify EDCO Products on Your Next Order."

EDDINGTON METAL SPECIALTY CO.

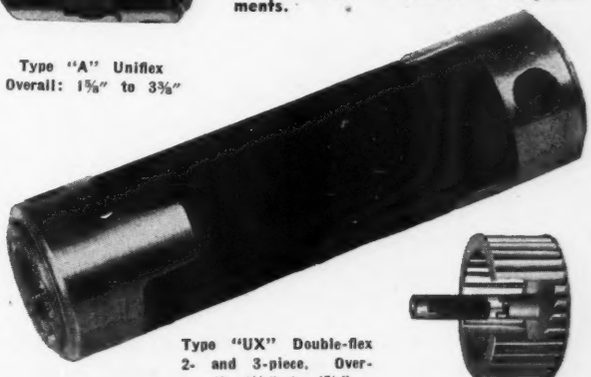
P. O. BOX K,
EDDINGTON - PENNA.



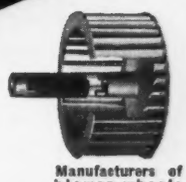
IMMEDIATE DELIVERIES!

L-R Couplings for Oil Burner and Air Conditioning Installations or Replacements.

Type "A" Uniflex
Overall: 1⅝" to 3⅜"



Type "UX" Double-flex
2- and 3-piece. Overall: 1⅛" to 4⅞"



Manufacturers of blower wheels furnish wheels with L-R jaws integral with hub.

L-R FLEXIBLE COUPLINGS

L-R Flexible Couplings Absorb shock-vibration — protect installations.

OHI

L-R Couplings, especially designed for these services, are extremely quiet, durable and reliable.

ANY QUANTITY FROM STOCK

Wire or write us NOW for details and prices. Lovejoy also makes flexible couplings for every duty and kind of service, 1/6 to 2500 h.p.

LOVEJOY FLEXIBLE COUPLING CO.

5012 W. LAKE ST. CHICAGO 44, ILL.

Warm Air Industry Plans Promotional Campaign

AGGRESSIVE MERCHANDISING PLANS, sparked by a $200,000 advertising campaign to sell the advantages of warm air heating to the trade and the public, were unfolded at the 31st Annual Meeting of the National Warm Air Heating and Air Conditioning Association at Cleveland, December 13 and 14. A record crowd of more than 400 responded enthusiastically to continued urging that the industry become more aggressive in merchandising.

On the technical side, a monumental advance in design and installation of warm air systems was made with the presentation of a simplified "Code and Manual for the Design and Installation of Warm Air and Winter Air Conditioning Systems." This manual presents short cuts to calculations which will bring the contractor to an installation which he would make under the Association's Technical Code. This system of lay-out and installation is coupled with a standard Information Blank and a Work Sheet which make possible a complete and satisfactory warm air installation without complicated calculations.

President Harold P. Mueller was re-elected president of the Association for another year, and Hugh Thompson, Cincinnati, was elected chairman of the Dealer Division.

C. E. Price presented a paper showing a total potential demand for 4,400,000 warm air units in the first five postwar years. This market assumes a replacement demand of 3,000,000 units, and a new home demand for 1,400,000 warm air installations. About 55% of the market is believed to be in the North Central States.

J. R. Scott, chairman of the Publicity and Merchandising Committee, presented an advertising plan that will put the industry's story into shelter magazines, news weeklies, rural papers, architectural, building and business papers. The program calls for a minimum of $200,000 in the first year, and it is hoped that it can be expanded in succeeding years.

A. H. Motley, publisher of American Magazine, told a luncheon audience that the United States can retain its present leading position in the world by maintaining a sound domestic economy. "We have produced to win the war," he said. "Now we must distribute to win the peace."

R. W. Carney of Coleman Lamp & Stove, cited inroads that had been made by government into business, and urged his audience to step up their business activity and eliminate any further excuse for government to enter the realm of business.

J. Archer Kiss, advertising executive, stressed the need for a more aggressive approach to the market. He based a formula for successful merchandising on the need to Glamorize, Dramatize, and Publicize the uses of the product rather than the product itself.

At the technical sessions Fred G. Sedgwick outlined the accomplishments of the research program and invited members to submit problems to the Research Committee for solution.

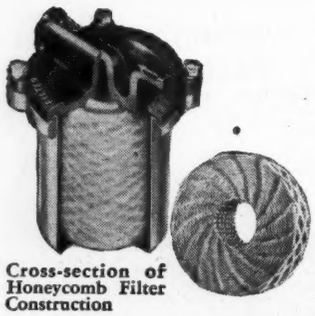
Prof. A. P. Kratz of the University of Illinois, discussed the former furnace rating formula, pointing out that ratings based on the ratio of heating surface to grate area had tended to overrate units with small ratios, and underrate the larger furnaces. Experiments had shown that the

"Sure we build big Filters,"

- - says Fulflo Jo

"Some of those we build for the huge Navy boats are bigger than an oil burner."

But unlike *ordinary* furnace filters the Model AS-4 Fulflo Filter, specially designed for household oil burners, is small enough to hold in the palm of your hand . . . it doesn't need to be bigger! Its exclusive Honeycomb Filter Tube – found only in Fulflo Filters – is so efficient that one tiny tube traps every speck of scale, slime, sediment, rust, or dirt *for a whole year.*



Cross-section of Honeycomb Filter Construction

Thousands of fine filtering webs, built up layer on layer in honeycomb form, clean every drop of flowing fuel. No shutdowns or service calls for fouled points or clogged nozzles. Only one joint, firmly sealed by four sturdy cap-screws . . . leak proof!

- No Rupturing
- No Channeling
- Microscopic Filtration
- Fast Filtering
- Cleans Oil Super-Clean
- Low First Cost
- Speedy Annual Servicing
- Protects Pumps
- Low-Cost Replaceable Tubes

INSTALL FULFLO FILTERS AND SAVE SERVICE CALLS

You'll build a reputation with your customers – earn valuable word-of-mouth advertising – and minimize profitless service calls.

Fulflo FILTERS
REG. U.S. PAT. OFF.

If your jobber doesn't stock Fulflo Filters and genuine Honeycomb Filter Tubes you can order direct from Commercial Filters Corporation, 28 West 3d Street, Boston 27, Mass.

BUILD GOOD WILL • PUT A FULFLO ON EVERY BURNER

THE INSIDE STORY

"WORKING - TOWARD - VICTORY"

When our job is finished we will again have available the finest heating equipment with all the improvements brought about by better equipment, increased knowledge, and manufacturing skill.

OIL EQUIPMENT LABORATORIES INC.

ELIZABETH, N. J.

MANUFACTURERS OF "ROTOFLAME" HEATING EQUIPMENT

GUARDIAN FLEXIBLE COUPLINGS

For OIL BURNERS

Sleeve end of coupling is close sliding fit on blower wheel hub. Power is transmitted through four spline ribs of coupling fitting four spline grooves in blower wheel hub.

This exclusive direct drive coupling, with rubberized cushion gripped permanently, has no parts to get out of order, or to lubricate. Minimizes misalignment, free-end float, and backlash. Custom-made for specific job. Immediate attention. More than 300,000 tested and proved in oil burners during the last five years.

Regular Guardian Coupling

Manufacturers, Jobbers or Dealers—

GUARDIAN UTILITIES CO.
218 E. Michigan St., Michigan City, Ind.

WRITE or WIRE

For BETTER SERVICE on

PUMPS - VALVES FUEL UNITS

WEBSTER — SUNDSTRAND — VIKING
DETROIT — TEESDALE — TUTHILL

REBUILT - EXCHANGED REPLACED

AUTOMATIC BURNER CONTROL *Exchange*

P. O. Box 1499

CALL 7-5767-8

224 BASSETT ST. NEW HAVEN 11, CONN.

ratio was less significant than the actual square feet of heating surface, and register delivery of a furnace could be expressed more accurately by multiplying the heating surface by 1785. This will be satisfactory for furnaces fired by conversion oilburners, gasburners and stokers, and for hand firing in furnaces having a ratio up to 25 to 1. Furnaces with a larger ratio will have to be rated differently for hand firing.

Guy A. Voorhees, who has headed the development work on a series of training books presented Section 1, "How to Make a Comfort Survey" and "How to Make Floor Plans." This is the first booklet in a series of which the Design and Installation Code and Manual is No. 7. When completed the series will constitute a text on the complete warm air heating business. Prof. S. Konzo has been chiefly responsible for editing and collecting data from the industry which has been used as a foundation for the booklets. Section 2 is "How to Check Frame House Construction," and Section 3 of the series is "How to Figure Heat Losses."

This series of booklets will be available to the trade and to the various schools which are to teach warm air heating. Prof. L. G. Miller of Michigan State, announced that the annual "Short Course" would be held March 19 to 22 at East Lansing, Mich., and other schools probably will be made available to the men of the industry in the near future.

cut down

OIL BURNER TROUBLES

SILOO
FUEL OIL
TANK SOLVENT
FOR CLEANING FUEL OIL
STORAGE TANKS AND EQUIPMENT
NON-INFLAMMABLE
NON-CORROSIVE
Assures free flow of oil and maximum operating efficiency . . . Absolutely harmless to fuel and equipment
PETROLEUM SOLVENTS CORPORATION
NEW YORK, N. Y.

SILOO Fuel Oil Tank Solvent is *scientifically designed* to dissolve the petroleum residues that accumulate in tanks and clog lines and filters . . . to keep the entire system free from water . . . to remove polymerized gums and act as an inhibitor against electrolysis.

SILOO in your customers' tanks assures maximum operating efficiency of their equipment, fewer free service calls and more profits for you. Absolutely harmless to fuel and mechanism, passes all fire underwriters' requirements. Write today for *complete* information and dealer proposition.

PETROLEUM SOLVENTS CORPORATION

GENERAL OFFICES: 331 Madison Avenue • New York 17, N. Y.

Northwest Oil Group at 22nd Annual Convention

NORTHWEST PETROLEUM ASSOCIATION members met at Minneapolis, January 4 and 5 for their 22nd Annual Convention and "Looking Ahead" Conference. Sessions were devoted to the "Looking Ahead" theme, with speakers covering Selling, Products, Taxation, Oil Marketing, and Transportation.

Dr. Gustav Egloff, Universal Oil Products, talked on the effect of modern refining on petroleum products and their yields. G. H. Halpin, vice-president and general sales manager of Minnesota Mining & Mfg. Company, spoke of the need for hard and intelligent selling in the years ahead. Dr. Edmund A. Nightingale, Univ. of Minn., outlined the probable trend of taxation in the postwar period.

Ketcham Buys Master Burner

KETCHAM WIRE & MFG. CO., Seattle, has organized the Master Oil Burner Division of the company to manufacture and sell the Master line of equipment which has been produced locally since 1933. The company now is contacting distributors of heavy oil horizontal rotary oilburners for domestic and export sales.

E. O. Northquist will manage engineering and production for the Division. He has been active in oilheating in the Pacific Northwest for twenty years, both on the domestic and commercial sides of the business.

B. M. Veltman will direct distribution. He has been associated with the industry for many years, handling both domestic and commercial equipment.

Henry G. Ellis, president of the Torrington Manufacturing Co., Torrington, Conn., died December 1.

HEIL

is the Name to Remember

— for oil burners . . . oil-designed furnaces and boilers *that assure you of:*

- ✓ Satisfied, loyal customers
- ✓ Minimum service trouble
- ✓ Efficient, economical operation
- ✓ Design features that sell
- ✓ Profitable manufacturer-dealer relations

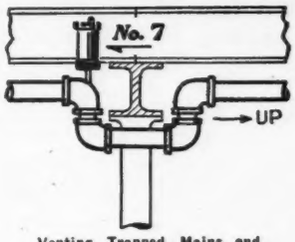
H-1

HEIL ANSWERS UNCLE SAM'S CALL
. . . and helps the Arsenal of Democracy supply materials for Victory!

THE HEIL CO.
GENERAL OFFICES: MILWAUKEE, WISCONSIN

And Keep It Out With

AUTO-VENT AIR ELIMINATORS



Venting Trapped Mains and Circulating Lines.

Circulation Troubles?

Don't fight air pockets or traps in hot or cold circulating lines! "Get that air out of there" *and keep it out* simply by installing the No. 7 Maid-O'-Mist Automatic Air Vent. This reliable air vent has a self-closing float-controlled valve and is designed especially for circulating pipe lines, convector radiators, unit heaters, cooling manifolds, tanks, diesel engines, or any other application where air pockets or traps retard the free circulation of liquids. For pressures up to 75 lbs. Now available in bright brass finish.

APPROVED FOR NAVY, MARITIME COMMISSION AND ARMY USE

MAID-O'-MIST INC.

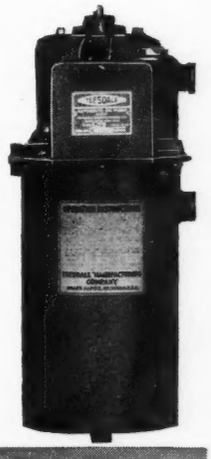
AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

213 NORTH ABERDEEN STREET
CHICAGO 7, ILLINOIS

TEESDALE

TODAY for Tomorrow !

PREPARE NOW
for those Postwar
PUMP SALES.
TEESDALE T. U. X.
will be the HEART BEAT
— of the —
BURNER'S OIL FLOW



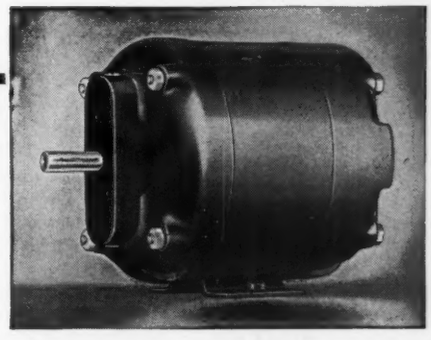
- *Capacity 30 Gals. per hour*
- *Silent and Leak-proof*
- *Vapor and Oil Tight*
- *Self-Priming*
- *All Parts Interchangeable*

Passed by Underwriters

T.U.X. PUMP

TEESDALE MANUFACTURING CO.
427 MARKET AVE., GRAND RAPIDS 3, MICHIGAN

A SMALL MOTOR



for General Purpose Applications

Types—Split Phase, Capacitor or Shaded Pole.
Speeds—1100, 1700, 3400 RPM.
Power—1/80 to 1/20 HP, depending on speed.
Voltages—Up to 220 A.C.
Frequencies—60, 50 and 25 cycles.
Bases—Solid, resilient or flange.
Mountings—Horizontal, Sidewall, Ceiling or Vertical, with shaft up or down.
Efficiency—High for such small powers.

OHIO reliable MOTORS

What is your problem?

THE OHIO ELECTRIC MFG. CO.
5913 Maurice Ave., Cleveland, Ohio

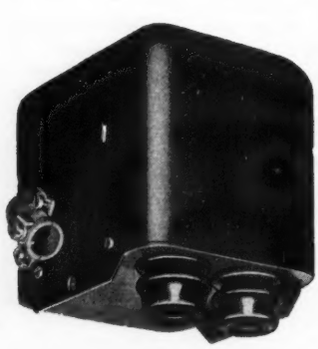
OHIO MOTORS

Hospital Report Examines Ways to Reduce Fuel Cost

HOSPITAL BUREAU of Standard and Supplies, New York, has issued a 40-page illustrated booklet on "Reducing Hospital Fuel Costs," which covers methods of reducing steam costs for hospitals. Copies are available from the Bureau at $1 each.

The report points out that three factors control the fuel bills: First, purchase of the proper fuel at the minimum price; second, use of efficient equipment for burning the fuel and generating the steam and for thrifty and modern utilization of the steam which has been generated; third, proper economical methods for operating the equipment which generates, distributes, and makes use of the steam. These three factors, together with proper selection of the fuel, are discussed in detail and with reference to specific instances. The report urges that the "Effective Price" of the available fuels be considered in terms of the heat units obtained per penny spent on them.

Numerous case histories and incidents are reported with respect to proper and improper operation of heating and power plant equipment, and boilers fired by oil burners and stokers. Hand-fired methods are discussed and references are made to the boiler efficiencies obtainable through the use of different firing methods. A summary covers fourteen steps that may be followed to cut the fuel consumption of hospitals and institutions.



GET SET FOR POSTWAR!

Don't be caught napping when you receive the "go" signal for full peacetime production.

Wide-awake oil-burner manufacturers have already made commitments for their postwar transformer needs. Those who delay may find themselves facing a transformer bottleneck in getting their peacetime products on the market.

Our volume of orders for postwar delivery is mounting steadily, day by day. Send us your specifications for a quotation.

DONGAN ELECTRIC MFG. CO.

2981 Franklin **Detroit 7, Mich.**

The Dongan Line Since Nineteen-Nine

WRITE FOR LITERATURE

DONGAN TRANSFORMERS

Paragon Airs Weather Forecasts and Hints

PARAGON OIL CO., Brooklyn, N. Y., is sponsoring twelve daily weather broadcasts in the metropolitan New York area by Benjamin Parry, chief meteorologist at the New York station. Six bulletins a day go over WHN at 7:00, 7:30 and 8:00 a.m., noon, 5:30 p.m. and 10:59 p.m. Six other broadcasts go over WNEW, WQXR, and WLIB.

Besides the regular weather forecasts, storm warnings and other urgent weather information go on the air at once. Announcements give daily and cumulative degree days, hints on fuel conservation, changes in rationing regulations, and similar heating information. Weather service also covers the Eastern Seaboard States and all of New England.

The Parry broadcasts climax a "Weather Wisdom" campaign which Paragon has been running in newspapers and magazines.

New England Oil Men Hear Beckes of S. & D.

OVER ONE-HUNDRED FIFTY oil men met on December 8 at the Hotel Statler, under the auspices of the Independent Oil Men's Association of New England to honor M. M. Beckes, who has been chairman of the Supply and Distribution Committee of the petroleum industry for New England since its start. Mr. Beckes has left to assume new duties with the Socony Vacuum Oil Co., New York. Mr. Jack Winchester, Manager of the Automotive Department of the Standard Oil Company of New Jersey, recently a represenative of the State Department studying truck transportation in South America, spoke to the members on tank truck fleet management, adding many remarks that included personal experiences on his job among the southern republics.

Perfex Has Retirement Plan for Employees

PERFEX CORP., Milwaukee, has inaugurated a profit sharing plan, designed to provide employees with retirement benefits at age sixty-five. All benefits are in addition to the Social Security program.

The plan requires no contributions from any employee. Each year Perfex will contribute 20% of its profits, after allowance for a predetermined return on the company's net worth. The corporation's estimated contribution for this year will amount to $80,000.00.

Every full time employee, who has completed four years in the continuous employ of the corporation, and has attained the age of thirty, will participate. Each year's contribution will be allocated individually to each eligible employee, based upon his earnings and the number of years in the employ of the company.

THE SHELL OIL CO., INC., N. Y., held a service award luncheon in the main ballroom of the Ritz-Carlton Hotel on December 20 in honor of three hundred and thirty-three veteran employees of its New York head offices. The luncheon was attended by all Shell employees who had been connected with the Company for a period longer than ten years, and included Alexander Fraser, president, who this year completed his twenty-fifth year of service; Lt. T. Kittinger, vice-president; and E. C. Peet, vice president and treasurer, who have also in the past completed twenty-five years of service with Shell.

SILENT GLOW held its first sales meeting for field men at the plant in Hartford, Conn., recently with 21 of its 22 field men present. The only man to miss the all-day session was Milt Dallin, Philadelphia, who is with OPA's building materials price branch at Washington. Discussion centered around market possibilities in the various territories, and plans for getting better coverage.

AEROIL BURNER CO., INC., West New York, N. J., has received the Army-Navy "E" to Plant No. 1. In addition to the equipment used directly in the war effort, a great proportion of the Aeroil line of "Heet-Master" Kettle production, too, has been sent to the Armed Forces since the beginning of the war.

"GEE IT'S FUN BEING AN H.C. LITTLE DEALER"

H. C. LITTLE BURNER CO. dealers are a happy lot. They make barrels of dough, because the public just loves to buy H. C. Little oil-burning home heating equipment.

No kidding! For example, before the war Mr. Edwin G. Peters, Manager, Gulf Radio Sales, St. Petersburg, Fla., wrote:

"As you know, we have in the past used various pieces of your equipment and have been very well satisfied. However, our greatest enthusiasm came this past year when we decided to advertise the floor furnace.

This advertising swamped us with inquiries that resulted in sales. The public response was greater by far than any other product we have ever advertised for sale. This includes appliances of all kinds. In the fourteen years of our business career in St. Petersburg, this is the first time that people have ever come in and asked to buy merchandise."

THIS IS THE FLOOR FURNACE MR. PETERS REFERRED TO

HERE ARE ITS CHIEF FEATURES—

- Low First Cost
- Simple Installation
- No Basement Needed
- Burns Cheap Fuel—Low Cost No. 3 Oil (27°+ Diesel Oil)
- Ample Capacity for Abundant Warmth
- High Overall Efficiency
- Silent—No Hum or Roar
- Safe—Listed by the Underwriters' Laboratories
- Written Factory Guarantee With Every Unit
- Automatic Operation
- Thermostatic Control

AND...

These floor furnaces have the **only fully automatic electric ignition natural draft vaporizing type burner** which is available, not only in these units, but in a complete line of small home heating equipment.

YOU TOO can make barrels of money as an H.C. Little dealer. Write for a copy of our new booklet, "How to Get Real Profits in Postwar Heating," which tells how to get started.

H.C. LITTLE Burner Co.

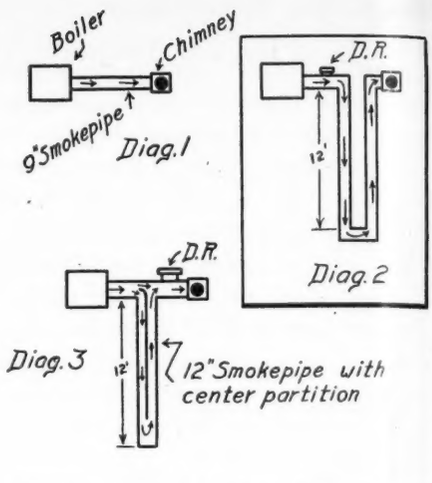
HEAD OFFICE: SAN RAFAEL, CALIF.

Branches in Principal Cities

Everyday Snags

Smokepipe Economizer

TO BEGIN WITH, the smokepipe of this oil-fired boiler ran nine feet, straight from the boiler to the chimney as Diag. 1 indicates. But the basement was cold, the owner noticed, and the smokepipe was very hot. Therefore when a new smokepipe was needed he installed the arrangement shown in Diag. 2. This provided 25 ft. of additional smokepipe to heat the basement, and did give very noticeable extra heat at no extra cost. But also it got the oil burner into pulsation trouble, for the total of four elbows and 34 ft. of smokepipe was too much for smooth starting and stopping. The serviceman called in because of the burner trouble laid out the plan of Diag. 3. This substitutes 12″ smokepipe throughout for the 9″ smokepipe used originally. The "economizer section," which heats the basement, consists of a 12 ft. long run of 12″ smokepipe attached to a regular tee in the 12″ smokepipe now used from the boiler to chimney. All of the pipe is hung at one level; there are no slopes upwards or downwards. To instill circulation of hot gases in the "economizer section," a vertical partition was installed in it as Diag. 3 shows, and a small "scoop" was extended into the tee. The owner, in providing a draft regulator, had installed it near the boiler as Diag. 2 shows, but for Diag. 3 the regulator was placed near the chimney so that the hot gases in the "economizer" would not be diluted and made cooler by cold air flowing into the smokepipe through the swinging disc type draft regulator. Also, with the draft regulator located as Diag. 3 shows, it can be removed to permit reaching into the tee and adjusting the position of the "scoop." A special fitting was used at the boiler to couple the new 12″ smokepipe to its 9″ smokehood connection.



This Rube Goldberg oil-stretcher not only warms the basement but, by check-up, proves to cut the oil consumption because the warmer basement gives heat to the living room. To put it in numbers, the owner gets no-cost heat from about 40 sq. ft. of hot surface he did not have before he started playing with the smokepipe. The temperature of this surface is high enough to make a considerable difference, for the gases leave the boiler hotter than 700°, therefore these heating surfaces are much hotter than, for example, the surfaces of steam-filled radiators.

◈

Quieting the Flame

INSTALLED FIVE YEARS ago to fire a round cast-iron boiler with a grate diameter of 32″ (see accompanying diagram), this pressure burner ran up a good record for troublefree operation and economical

. . . when your customers turn on the heat!

POST-WAR customers will want to "turn on the heat" with new Herco heating equipment . . . and if they don't get that new equipment quickly they may turn the heat on you!

Keep cool, when that time comes, by making provision now for an adequate post-war supply of Hercos.

Herco's dealership plan offers delivery preference for the post-war market. Be sure of getting your full quota of new Hercos for post-war selling. Write for information on our dealership plan today . . . no obligation.

HERCO OIL BURNER CORPORATION, Lancaster, Pa.

HERCO
The Oil-Thrifty
OIL BURNER

HERCOS AT WORK ARE HEROES AT HOME

Among the "war heroes" at home are thousands of pre-war Hercos now in operation . . . giving the dependable, economical, trouble-free service for which the Herco name has always been famous.

Announcing

additional manufacturing and distribution facilities

for BALLOFFET NOZZLES

by DELAVAN MANUFACTURING CO.

Des Moines, Iowa

To meet an ever-increasing demand, BALLOFFET has licensed DELAVAN MANUFACTURING CO., Des Moines, Iowa, exclusively to manufacture and sell the traditionally fine quality Balloffet Nozzles. DELAVAN, with a background of many years' engineering experience, is now fully equipped to build Balloffet Nozzles. Modern machines and skilled craftsmen will assure the same precision-built Nozzles which have made Balloffet the standard of the industry. Send your orders now to either BALLOFFET, or DELAVAN.

BALLOFFET
Dies & Nozzle Co., Inc.
6825 Adams Street
Guttenberg, N. J.

DELAVAN MANUFACTURING CO.
3009 Sixth Avenue
Des Moines 14, Iowa

The Vinco Company
Incorporated

wishes you

A Happy New Year

with Victory!

Thank you for the Confidence

So effectively expressed

these Twenty Years.

1925 — 1945

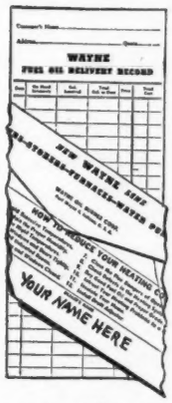
New! Convenient!

HEATING RECORD CONTAINER

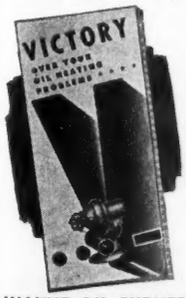
For Your Customers

FREE

TO ALL OIL BURNER and FUEL OIL DEALERS



As illustrated—especially designed as a container for fuel oil ration coupons. Front has place for customer's name and ruled form for keeping a complete record of fuel oil purchases. Reverse side lists 12 points on how to save fuel and has place for dealer imprint.



A gift your customers will appreciate —and it's FREE—to help you build post-war business and to get profitable service and accessory sales now. ORDER TODAY. State number desired using your business letterhead.

Wayne Victory Heating Manuals

They're FREE to all Oil Burner and Fuel Oil Dealers. Order your supply of these manuals now. State number needed using your business letterhead.

WAYNE OIL BURNER CO. 921 GLASGOW AVE.
FT. WAYNE 4, INDIANA

WAYNE'S V-DAY LINE WILL BE COMPLETE

Get FUEL-SAVING FACTS with this modern COMBUSTION TEST SET

Cooperate with our government's National Fuel Efficiency Program and build your reputation for expert, fuel-saving service . . . by using these practical instruments to make efficiency tests of heating plants.

The easy-to-use FYRITE quickly indicates CO^2 in the flue gas, thus showing whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of fuel burned. The unique FIRE Efficiency FINDER correlates CO^2 and stack temperature readings to show at a glance preventable chimney losses. The handy dry-type DRAFTRITE gauge is indispensable for properly adjusting the draft.

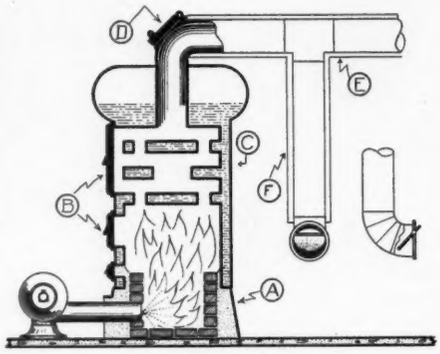
For prices, and complete particulars about the Fyrite Combustion Set, write for Folder 4401.

HEATING SERVICE DIVISION
BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 BENNETT STREET · PITTSBURGH 8, PA.

heating. The oil bills totalled 25% less than the coal bills had been. There was one flaw in the installation, however; the flame rumbled and could be heard throughout the house.

The dealer's efforts to quiet the flame, made during the first year the burner was in use, included switching nozzles and altering the oil and air rates and the draft. But the noises continued until September, 1944, when the installation needed a general overhaul and the following steps, which proved 100% successful, were taken to turn the noisy flame to a silent flame:

A. (See "A" in diagram) The deteriorated firebox was torn out and replaced



by one built of light-weight firebricks of the type known not only for producing higher efficiencies, but also for their noise-deadening characteristics. To match the 3.0 gph needed to carry the radiation load, the new combustion chamber was built of these dimensions: diameter 20", nozzle height 7", side wall height 18".

B. The firing door and flue cleanout door were filled with sound-deadening special high temperature insulation, and by filing the doors and frames and adjusting the hinges and latches these doors were made to fit tight.

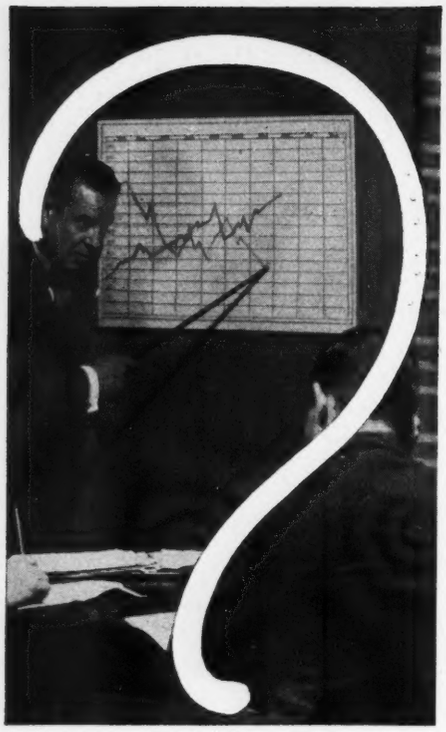
C. All of the old ½" thick asbestos insulation was removed from the boiler, the many air leaks between the boiler sections were well sealed with furnace cement, and the boiler was covered again with a 2" thickness of modern, highly effective insulation.

D. An old-style draft-breaking damper at the top of the boiler fitted loosely and, every so often when the burner started or stopped, tended to jump open. Therefore it was wired shut, with the help of a screw the dealer placed in a hole drilled and tapped into the smokehood casting, and furnace cement was used to make tight the crack at the edges of the damper.

E. The entire smokepipe was covered, for sound-deadening, with a 2" layer of special insulating material.

F. The draft regulator, which used to permit the escape of flame noise, was mounted low on the "elephant's trunk" arrangement shown in the diagram, and the vertical pipe of this was insulated also. Details of the draft regulator mounting are shown, as a side view, in the right-hand side of the illustration.

The flame is now so quiet that a serviceman has to open the firing door to find out if it has lighted properly after the motor starts. The renovating job cost the



Operate
PROFITABLY
in spite of
Restricted Volume

Heating sales volume is bound to be curtailed during the present national emergency. Therefore, such sales as are completed must be profitable. The H. B. SMITH line of heating boilers is the outstanding *profit line* in this field . . . and it is just as complete as it is profitable.

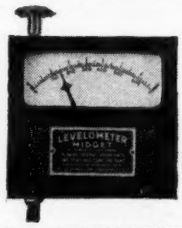
When you sell H. B. SMITH boilers, you are selling a line that has consumer acceptance as a quality product . . . a product on which a fair profit can be realized. Furthermore, you not only *make* a profit, but you *keep* it, for there are no costly call-backs and service visits where an H. B. SMITH boiler has been properly installed. Now, as never before, you need to sell equipment that lifts your sales above competition. Resolve to make SMITH the line for you

The H. B. SMITH CO., Inc.
WESTFIELD • MASSACHUSETTS
Boston New York Philadelphia

SMITH
Since 1853
MOST FAMOUS NAME IN HEATING

WITH OIL CONSERVATION MORE VITAL THAN EVER, Its Accurate Check-Up IS IMPORTANT—

INSTALL LEVELOMETER Tank Gauges
"THEY'RE ALWAYS DEPENDABLE"



Midget LEVELOMETER
Lowest priced Remote Reading Gauge Built

Small Model
LEVELOMETER
6"x 6" case

Large Model
LEVELOMETER
12"x 12" case

A LEVELOMETER gauge on an oil tank installation eliminates guesswork—it insures accurate readings at all times.

Convenient, remote reading:—LEVELOMETER dial may be located at any reasonable point from tank and—large graduations and numerals make it easy to read.

LEVELOMETER tank gauges, approved by Underwriters' Laboratories, operate on an exclusive adaptation of the hydrostatic principle. No liquid is used in indicator to be affected by temperature changes, to evaporate, stain glass or to be blown out due to excessive pumping.

Get complete details regarding LEVELOMETER tank gauges—the Remote Reading gauges that insure accurate—trouble free check-up.

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

Highest Quality joined with Accuracy and Workmanship--- Responsibility gives you great Satisfaction and fullest Confidence toward our HARSCH Nozzles!

H. HARSCH & CO., INC., 230 TUSCAN ROAD, MAPLEWOOD, N. J.

Rajah

HAND CRIMPING TOOL

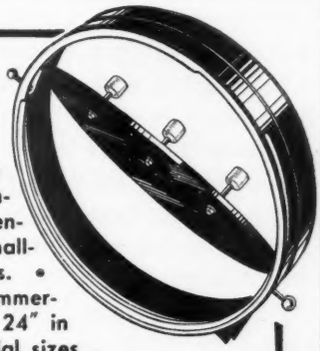
IT CUTS AND STRIPS AND ALSO CRIMPS

Rajah Terminals to ignition cable without the use of solder or any other tools

The RAJAH COMPANY, Bloomfield, N. J.

PREFERRED

DRAFT-A-JUSTOR



The Original. Still the Best. Hundreds of Thousands in Use. • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

Write for literature and trade price

PREFERRED UTILITIES MFG. CORP.

1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

T-23 OIL HEATING PACKAGE SET

★ Packed conveniently in one package . . . ready for immediate installation . . . everything needed for remote thermostatic control of

Oil Heating Furnaces ★ Circulating Heaters ★ Conversion Burners, Water Heaters and other oil-fired equipment.

Dependable and economical, T-23 Packaged Controls are easy and quick to install on new or old applications. Complete set includes K-20-3 Oil Valve of silent A.C. type with by-pass adjustment for minimum flow regulation or pilot; T-70 two-wire Metrotherm Thermostat; T-O Transformer; and 30 ft. of wire.

Write for Catalog 52B.

GENERAL CONTROLS

801 ALLEN AVENUE GLENDALE 1, CALIF.

Branches: Atlanta, Boston, Chicago, Kansas City, Cleveland, Dallas, Denver, Detroit, Philadelphia, New York, San Francisco

OIL SOOT **E-Z** DESTROYER

WAR ON WASTE!

Increase efficiency of oil by keeping heating unit free from excess soot. All oil soot in fire chamber and flues vanishes instantly when sprayed with E-Z Fuel Oil Soot Destroyer.

"EASY TO USE— ECONOMICAL TOO!"

DISTRIBUTORS: *Write for fine proposition.*

HEALY-RUFF COMPANY, 707 Hampden Ave., St. Paul, Minn.
Enclosed find check ( ) money order ( ). Send the following prepaid:

No. 1 pkg. ....$1.00 Name .....

Address .....

No. 5 pkg. .... 4.50 City ..... State.....

All Burner Parts

NEW — REBUILT — REPAIRED

AUTHORIZED TUTHILL PUMP SERVICE

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Parts for All Types and Makes of Burners.

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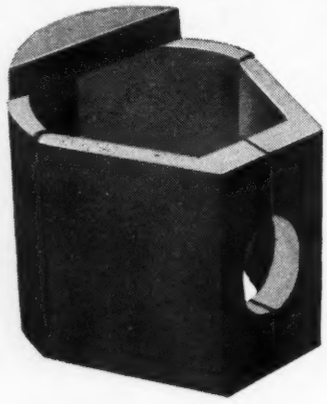
TROJAN

COMBUSTION CHAMBERS



The TROJAN Combustion Chamber is made of "STEEL MIXTURE" high heat duty refractory. It has great resistance to high temperatures, flame impingement and vibratory shock.

It is correctly shaped for efficient, clean burning.

Consisting of only a small number of parts, it can be quickly and easily installed.

It is furnished in various sizes for different capacity requirements.

Write for Bulletin F-44 and price list, today.

McLEOD & HENRY CO., INC.
TROY, N. Y.

STEEL MIXTURE
McLEOD & HENRY CO. TROY, N.Y.

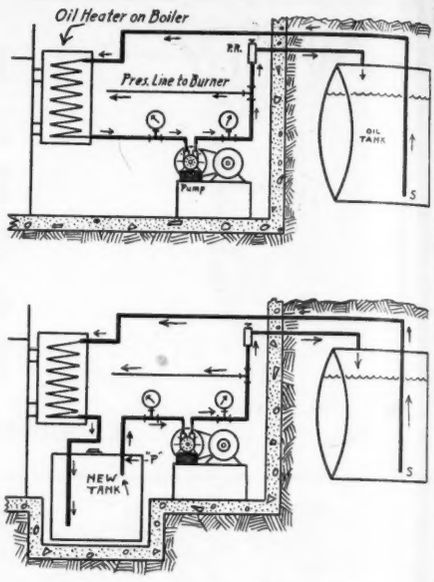
owner $138, and will probably prove to be a good oil-conservation investment because the boiler steams more rapidly from a cold start than it did before, the effective insulation on the boiler almost eliminates the loss of heat from it, and earlier combustion test readings of 9% CO_2 and 640° stack temperature have been improved to 11¼% CO_2 and 575° stack temperature with no lowering of the gph rate.

◈

Oil Preheating Trouble

SHOWN IN THE upper part of the accompanying diagram is a belt-driven oil pump which handles heavy fuel oil obtained from suction line "S" of a buried oil storage tank. The only oil preheater on the installation is a large indirect heater, piped into the suction line to give the pump hot oil, and mounted under-the-waterline on the commercial heating boiler. Used occasionally on automatic installations, as well as frequently for manally-controlled commercial and industrial burners, this oil heating arrangement gives the advantage of providing ample heat for the oil flowing to the pump.

This rig has two disadvantages, however, which led to troubles and inconvenience on this particular installation. First, with the oil pump idle and the boiler hot, the fuel oil stored in the coils of the heater reaches the temperature of the boiler water. When the pump is next started, for a few minutes it handles overheated oil, as thin as water, together with oil gas from the overheated oil. Erratic and unsatisfactory pumping is the result. The second disadvantage lies in the oil temperatures varying greatly for the first few minutes the pump and burner are



operated following an idle period with the boiler and oil heater hot. Before oil at the proper temperature reaches the oil burner regulating value, overheated oil flows through it and gives a greatly oversize flame. With both the oil pump and the burner regulating valve receiving "shots" of cold oil, hot oil, and oil vapor, to get the flame started after a one to four hour shutdown takes nursing from a fireman who is patient and not too timid. During the first six months of 1944, the eight elderly firemen hired to tend the boiler quit their jobs, one after the other. The management had reason to believe they did not relish the goings-on that attended each effort to light the big oil burner.

The lower drawing shows how the burner was tamed by improving the installation. A hot water storage tank, without leaks but not used because it had been replaced by a tankless water heater, was found in the storehouse of the owners of this burner equipment. On the suggestion of a combustion engineer sent by the oil

A PRIZE FRANCHISE if you want to Lead the Field

Just as Paragon NONE BETTER OIL BURNERS Lead in N.Y.C. Sales!

A Paragon NONE BETTER PRODUCT

Write for FRANCHISE: PARAGON OIL CO., INC., BRIDGEWATER ST. at NEWTOWN CREEK, BROOKLYN 22, N. Y.

FREE

Yourself from Water Level Troubles.

NEWARK CONTROLS

BLOOMFIELD, NEW JERSEY

LACO Nu-Comfort **OIL HEAT**

Manufacturers Since 1924

YESTERDAY—Laco Mineral Wick Burners, Pressure Burners, Space Heaters.

TODAY— War Work, Space Heaters.

TOMORROW—Conversion Burners, Space Heaters, Warm Air Furnace Units.

LACO OIL BURNER CO., Griswold, Iowa

"WHECO" IN 1945!

DRASTIC CHANGES AND IMPROVEMENTS IN OUR OILHEATING LINE WILL BENEFIT ALL WHECO DEALERS

"Highest quality, best designs and excellent service"—our motto for 1945.

Westchester Home Equipment Co.

432 Austin Place **New York, N. Y.**

SUNBEAU **Automatic Oil Fired Water Heaters**

Now Available—31 Models
Gun and Pot Type Burners

Sunbeau Oil Burner Co., Inc. • Los Angeles 7, Calif.

Day and Night

WALKER AUTOMATIC DRAFT REGULATORS
SAVE CRITICAL WAR MATERIAL

FUEL

Do you know that any heating plant wastes 25% to 50% of the Fuel it consumes through improper hand controlled dampers?

When you sell and install Walker Automatic Draft Regulators, you have the assurance that millions of these famous controls are at work Day and Night in Private Homes, Public Buildings, War Plants and Army Camps conserving the Nation's Vital Fuel.

Walker manufactures an Automatic Draft Regulator for any type of heating system, from the smallest domestic to the largest industrial unit, using any kind of fuel.

WALKER FUEL SAVER TYPE 34-B AND 34-C WITH STOVE PIPE TEE JOINT

More than 4,500,000 units of these famous WALKER Regulators have been installed for the fuel users of America. Furnished in sizes 3" to 10" inclusive, in blue, chrome or cadmium, if and when available, and packed in individual cartons or bulk.

IMPORTANT: We do not compete, either directly or indirectly with any manufacturer of heating unit of any kind.

THE WALKER PLANT is the largest and most modern factory in the world devoted exclusively to the manufacture of Automatic Draft Controls.

WALKER MFG. & SALES CORPORATION

1714 Penn Street **St. Joseph, Missouri**

PETRO
REG. U. S. PAT. OFF.

DOMESTIC AND INDUSTRIAL OIL BURNING EQUIPMENT

DOMESTIC—Pressure Atomizing-Models:

- Residential "Conversion"—4 models, 1 to 6 g.p.h.
- Commercial "Conversion"—3 models, 6 to 18 g.p.h.
- Flange Mounting Special Models for popular boilers and furnaces.
- Complete boiler—or furnace burner units.
- Direct fired water heaters.

INDUSTRIAL—Rotary Cup Type-Burners:

- 8 sizes for #5 oil, 7 for preheated #6 oil with Petro "Thermal Viscosity" system, for manual, semi-, or full automatic operation to 145 g.p.h.

PETROLEUM HEAT & POWER COMPANY

Makers of good oil burners since 1903

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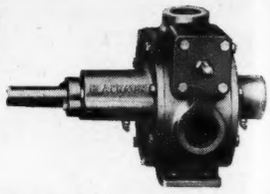

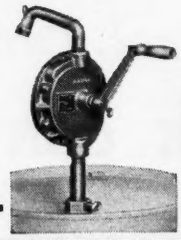

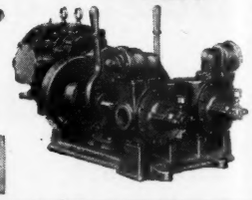

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supplier to check the installation, this tank was simply installed in the suction line to the pump, as the lower drawing indicates. This tank becomes filled with hot oil, at about 170°, with the oil burner and pump running normally. The oil in it stays hot during a shutdown; check-ups indicated that in the warm boiler room there was little to be gained by insulating the tank, at least as far as improving the lighting characteristics of the burner were concerned. At the end of a five hour shutdown, the tank temperature is about 150° because any slight chilling of the tank congeals the oil inside it, lying in contact with the metal, and produces an inside coating of insulation in the form of thickened oil.

The tank holds 150 gallons of oil which acts as a thermal flywheel or stabilizer of the temperature of the oil going to the pump. Spilling about five gallons of extremely hot oil into the tank, when the pump is started after a short shutdown, merely raises slightly the temperature of the oil already in the tank. Oil vapor from the oil heater has an opportunity to chill and turn back to liquid oil in the tank. The new rig will permit easier starting of the pump and oil burner with the boiler entirely cold, should such starting ever be necessary, because even then the oil in the boiler room tank will be warmer than the oil coming in from the outside lines. Also, should the need arise, the new tank can be filled with light oil for an easy start after the plant has been shut down long enough, in coldest weather, for the boiler room equipment to chill entirely.

The line which draws oil from the new tank extends 12" down into this tank, as the drawing indicates. This line is 1½" size, and at the top of the tank stub, just under the top of the tank, is a small vent-hole, labelled "P" in the drawing, to permit any air and oil gas to find their way to the pump slowly. This is a ¼" hole, drilled in the side of the pipe. The boiler room operator is instructed to check the inside tank twice a month to make sure it is full of oil. Checking takes less than five minutes, and is done simply by removing the plug at the top of the tank with the pump idle and oil valves closed.

The valve labelled "P.R." in the drawing is the pressure regulator valve which serves to place the proper pressure on the line to the oil burner. The oil line strainers and shut-off valves of the installation are not shown in the diagrams. The gauge to the left of the pump is a vacuum gauge; at the right is a pressure gauge. The installation has three oil line thermometers: one where the suction line comes through the foundation wall, one at the output connection of the oil heater, and one near the suction connection of the oil pump.

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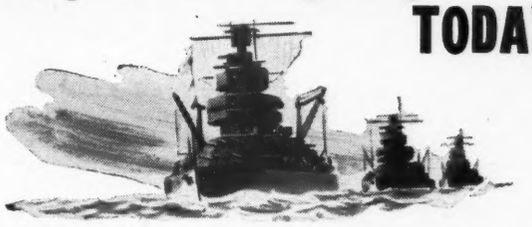

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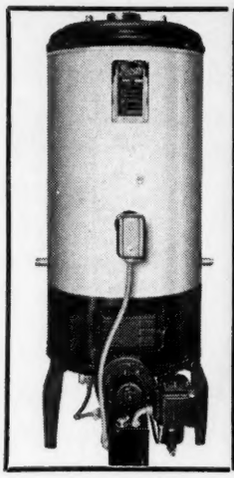

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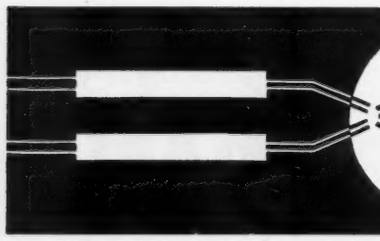

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